

BEAR CREEK WATERSHED ANALYSIS

WILDLIFE

CHARACTERIZATION

The Bear Creek Watershed Analysis Area includes all land area which drains into Bear Creek including the areas along the shore of Palisades Reservoir which historically drained into the stream which is now below the high waterline of the reservoir. The boundary includes all of the Calamity Campground area including most of the summer home areas there. Most species of native wildlife that were here historically inhabit this watershed. Those that were here historically that do not regularly occur here now include bison, rocky mountain big horn sheep, Whooping Crane, gray wolf and grizzly bear. Unconfirmed sightings of the latter two species have occurred during the past two decades on the Palisades Ranger District. Big horn sheep have been reported across the reservoir from here in recent times. Key wildlife species and habitat characteristics are discussed here.

Habitats

Habitats that fall within these watersheds from the higher elevations down to Palisades Reservoir are diverse. Cottonwood trees are in small pockets along Bear Creek. The predominate trees are mixed conifer, Douglas fir, lodgepole pine, quaking aspen, some limber pine higher up, subalpine fir and englemann spruce. Old growth/mature Douglas fir trees within about a mile of Palisades Reservoir are a critical habitat component for nesting Bald Eagles, which once nested along the river and stream corridor in cottonwoods previous to the dam's construction. The Douglas fir along the reservoir edge has now replaced the cottonwoods as prime Eagle nesting trees. The cottonwood trees below the reservoir high water line prior to the dam was critical habitat for Eagle nesting. It is now flooded. A past study in the early 1980's of favorite Bald Eagle nesting and foraging habitat has occurred here (USDA, Forest Service 1985). The analysis area is home for the Van Point Bald Eagle territory which has been monitored for up to two decades now. The habitats in this stretch of the reservoir shoreline in this analysis area (old Bear Creek drainage) are among the more active with human activity (second only to the Hoffman-McCoy shoreline further south). This analysis area includes one of the most popular campgrounds and boat ramps (Calamity) on the reservoir, adjacent summer homes (Palisades and Calamity home areas), power-lines, boating, skiing, paragliding and fishing activity, shoreline camping (using boat access) and at Tissue Point riparian area, developed boat club facility and Palisades Dam operations.

Watershed riparian areas are characterized by willow, dogwood, alder, river birch and hawthorne habitats. These provide a base for beaver activity which provide additional pond habitat for a variety of wildlife species. Generally, most of the watershed is roadless and human impacts are not major except along roads and motorized trails. Evidence of motorbike and horse trail use and grazing by domestic sheep are the most noticeable in this roadless area.



Figure 1 (left). Lower part of Bear Creek riparian area showing a small pocket of cottonwood habitat with conifers increasing in the bottomland.

Figure 2 (right). Douglas fir and mix conifer are predominate on the north facing slopes.

Historically (1900-1960), the riparian zone had a lot of grazing activity (much more than now; refer to Range section) as well as human recreational use, hunting, fishing and trapping. In the early 1800's it is most probable that Bear Creek was heavily influenced by beaver and it is likely that trapping in that period to the early 1900's helped change the water regimen and channels of the creek to what is seen today. This scenario was true for most streams in the west. Economic stimulus of fur-trapping is why early white men penetrated the wilderness and their activity decimated beaver populations over most of the west (Chittenden 1986, Johnson and Chance 1974). Some stretches of the main Bear Creek streamside are actively cutting and lack willow vegetation. In the side drainage of Warm Creek the springs area reminds one of features in Yellowstone Park on a smaller scale.

The lower elevations of the watershed near the reservoir are identified as big game winter range for elk and deer in the Revised Targhee Forest Plan (USDA 1997). There may be other pockets of winter range on southern aspects that serve wintering animals depending on the severity of the winter. Generally, however, most big game migrate out of the watershed during the winter months with most moving to the Tex Creek winter range managed by the Idaho Department of Fish and Game and the Fall Creek watershed which is the most important winter range on the Palisades Ranger District. All of the watershed is available for crosscountry snowmobile travel except the designated winter range at the lower end by the reservoir where FS road 058 is designated and groomed as a snowmobile route.

During the snow free seasons, cross-country motorized travel is not legally allowed on National Forest lands in the watershed, but are required to stay on designed trails. Juniper and mountain mahogany is characteristic on harsh dry rocky ridges with southern exposures. Some south facing slopes with sagebrush and snowberry have been manipulated with prescribed burning during the past decade to increase low seral stages.

Besides riparian and winter range habitats the landscape is characterized by north slopes dominated by mix conifer of Douglas fir, lodgepole pine and subalpine fir often mixed with aspen clones or mountain brush depending on elevation and aspect. North slope conifer is

generally characterized by older late seral plants to old growth except where fire has occurred. There are some conifer that are closed habitat, but do not exhibit the often observed patches of dead conifer in maturing disease and insect impacted stands. In many stands, however, standing dead snags and down dead wood is a key wildlife habitat component due to insect and disease activity or lightning strikes that never developed into full-blown forest fires. Often during the past four or more decades small fires were never able to develop due to suppression by smoke jumpers and hot shot crews that put them out while they were small.



Figure 3 (left). Beaver activity on main stem of Bear Creek.

Figure 4 (right). Short stretch of main Bear Creek lacking riparian vegetative habitat and where stream cutting is impacting the trail.

Aspen clones also tend to be older age and found more often on southern slopes or lower down on north slopes. Aspen in the watershed appears to occur more in patches associated with conifer rather than extensive stands which can be found along the South Fork of the Snake River and Fall Creek to the north. As is evident in many watersheds of the intermountain west aspen habitat has been lost to conifer habitat through succession in Bear Creek as well. This increase in older age conifer, older aspen and replacement of aspen is believe to be due to the fire suppression activities of man during the past 100 years. The late seral timbered types are important for a variety of species such as cavity nesters, hawks, owls, possibly lynx, bear, elk, songbirds, furbearers, woodpeckers and a variety of other species dependent on old age forests. Cavity nesters and other species in this group may be at a population high at this time.

Rocks and cliffs are found in the area and are important habitats for selected species. Where they are found (see lower part of figure 5) they are important for a variety of small mammals and birds, raptors and bats including some Forest Service sensitive species. Historically, this feature in this watershed may have been important to bighorn sheep to escape predators.

The elk forage to cover ratio for this watershed analysis area is estimated to be 47 percent cover to 53 percent forage (USDA 2003). Closed conifer habitat in association with willow bottoms may be travel corridors and habitat for Canada lynx. Historical records indicate they were in this

area. Because of the remote nature of the watershed, it has probably been more secure than most from fur trapping activity. However, there has been a lot of domestic sheep grazing with associated predator control activity as well as big game hunting.



Figure 5 (left). View of typical south facing slope of brush and trees above Bear Creek. The southern end of Fourth of July Ridge is shown in upper left background with the raw and open slopes of Chaparral Hollow below. Cliff habitat in lower part of photo is just above Bear Creek.

Figure 6 (right). Short stretch of main Bear Creek showing healthy riparian vegetative habitat cover mixed with streamside conifer.

Species

A great variety of wildlife inhabit the watershed area including nesting Bald Eagles, cougars, mule deer, elk, moose, black bear, Ruffed and Blue Grouse, songbirds, waterfowl, cavity nesters, small cavity owls, Goshawks, Great Gray Owls, coyotes, small mammals, Golden Eagles, snakes, amphibians, and many others. Occasional unconfirmed reports of grizzly bear and gray wolf have been received in or near the watershed, but no bighorn sheep on this side of the Snake River are known in recent times.

Federally listed threatened or endangered species that occur here or may occur here include Bald Eagle, Canada lynx, gray wolf and grizzly bear, but not Whooping Crane. Whooping Cranes are very rare at this time, even at Gray's Lake, which is only about 6 miles or more south of the analysis area. Gray's Lake has had Whooping Crane in the past and the watershed area could have had them occasionally as well as fly overs in the past. Currently, the US Fish and Wildlife Service is saying there are no whoopers in the western US. The Intermountain Region of Forest Service Sensitive species are listed below.

Table 1. Sensitive Species and Key Habitats.

Sensitive Species	Key Habitats
Peregrine Falcon	Cliffs, crevices. Forages Snake River

	below the dam and riparian areas such as Bear Creek. Nesting is known within 3 miles of the analysis area.
Northern Goshawk	Dense mature conifer, Douglas fir, aspen, lodgepole pine forests.
Great Gray Owl	Often uses Goshawk nests, other raptors nest, top of snags or brooms.
Flammulated Owl	Aspen or conifer cavities for nests. Mature Douglas fir for foraging for moths.
Boreal Owl	Subalpine and spruce in cooler north slopes, but also in Douglas fir.
Three-toed Woodpecker	North slope conifer with old trees, fire damage and snags.
Townsend's Big-eared Bat	Mature forests, snags, cliffs, rocky habitat, crevices, caves, old mines.
Spotted Bat	Cliffs, rocky habitat, crevices, caves, old mines.
Fisher	Mature forests with down dead woody material.
Wolverine	Travels large areas and generally dens at elevations 7500 feet or higher. Known to be traveling through the Bear Creek watershed in 2002 and in Caribou Mtn. area to the south.
Columbian Sharp-tailed Grouse	Open brush and grass habitats in open basins and maybe found along the edges of the Bear Creek watershed, but not likely to be in the watershed.
Spotted Frog	Riparian habitats of quiet water on stream edges of river, creeks and ponds. No records in the watershed, but known to north and south of here.
Harlequin Duck	Found along Palisades Reservoir and Snake River. Nesting in some reservoir tributary streams nearby. Bear Creek was probably historical habitat for nesting, but it is not known.
Trumpeter Swan	Found year round on Snake River and occasionally seen on the reservoir. No records known in Bear Creek, but have been seen in Fall Creek to the north.
Common Loon	Not likely to be in the area, but are seen in the Bear Creek arm of the reservoir each spring. No nesting along reservoir is known.

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KEY QUESTIONS AND ISSUES

The Upper Bear Creek watershed wildlife habitat has had only a few past human influenced activities since white settlement because of its roadless character, and most continue today. The lower watershed however has been impacted much more such as the inundation of the lower stream stretch by Palisades Reservoir. Summer Home sites have been permitted and constructed on National Forest lands as well as roads and recreation developments.

The earliest Caucasians were fur trappers and settlers. They trapped beaver, shot grizzly bear, killed wolves, hunted bighorn sheep and bison as well as other game in and around this area. Early settlers basically removed the latter four species and beaver were often trapped to the point of de-watering upper watersheds during late summer.

More recent activity (past 100 years) includes domestic sheep grazing, fencing, mining exploration, noxious weed invasion, road and trail construction and maintenance, dispersed recreation including camping, hunting, fishing, trapping, horseback travel, hiking, motorized snowmobiles, all terrain vehicles (ATVs), motorcycles, off-road vehicles (OHVs), some logging, some firewood cutting, farming (farms in reservoir area) and prescribed burning. Wildfire and fire suppression has also had an effect. All of these activities have and do affect the quality and quantity of wildlife and their habitat.

The predominate Prescription Area from the Revised Targhee Land Management Plan (RTFP; USDA 1997) is the 6.1b area (Range Management) which emphasizes livestock grazing, big game seasonal range and watershed protection. Other Prescription Areas include 2.7a (Big Game Winter Range), 3.1.1a (Non-motorized Recreation), 2.4 (Eligible Scenic River for Bear Creek), 5.1.3b (Urban Fuels Management), 4.1/ 4.3 prescriptions for developed/ dispersed camping and 4.2 for Special Use permit areas (summer homes and boat club). There is also a small part of prescription 5.1.4b (Timber Management for big game security emphasis) in the upper part of the South Fork Bear Creek drainage and it is being planned in 2003 for timber harvest. These uses present a variety of habitat and human related issues for wildlife.

Key and important habitats for wildlife in the watershed include willow and dogwood in riparian areas, brush, juniper and mahogany in winter ranges, rock outcrops and cliffs, aspen clones, conifers including Douglas fir and alpine fir, and snag cavity habitat with associated down dead wood in all timber types.

Key questions or issues:

1. To what extent and how has the historic and current activities influenced wildlife and habitats, particularly the dominate use of domestic sheep grazing and related activities?

2. How has the increase of motorized travel in roadless, cross-country or closed areas by vehicles (motorcycles, ATVs, etc) affecting wildlife and habitats in the watershed? If negatively so, where are the impact areas?
3. How is current snowmobile activity affecting wildlife in the watershed, particularly wintering big game or lynx?
4. How are the current activities of grazing and motorized vehicles affecting key wildlife riparian habitats such as Bear Creek?
5. Are riparian habitat conditions and other activities conducive for sustainable beaver populations in the drainage?
6. How is current fire management (e.g. prescribed fire and suppression) affecting habitats such as Douglas fir, alpine fir, lodgepole pine, aspen, mountain brush, sagebrush, mahogany, juniper, grassland, willow bottoms, aspen, conifer and dead wood habitats?
7. Based on results of historical wildfire and prescribed burning would additional prescribed fire or wildfire in the analysis area be beneficial or harmful to wildlife in both the short-term and long-term?
8. What surveys need to be conducted to increase our knowledge of the quality and quantity of species habitat and populations?
9. Are the current conditions of existing habitats (eg. conifer, aspen, brush, riparian, winter range, etc.) meeting the needs of wildlife that are or should be in the area? Would manipulation of habitats provide better conditions? Would an increase or reduction of existing human activities benefit key wildlife species?
10. Are any federally listed threatened, endangered, sensitive (TES) or Forest management indicator species (MIS) lacking viable habitat conditions? Are any wildlife species not found in the area that were found here historically? Particularly, how important is Bear Creek for Bald Eagles?
11. What is the extent of big game winter range in the watershed currently or historically?
12. What is the elk forage/cover ratio and vulnerability in the analysis area?
13. What is the history, quality and quantity of lynx habitat in analysis area?
14. What will it mean for wildlife and habitat if urban interface fuels reduction projects and timber sale projects are implemented along the Palisades Reservoir face in the Calamity Summer Home and boat club urban interface zone?

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WILDLIFE

CURRENT CONDITIONS

WILDLIFE HABITAT AND FIRE INFLUENCES

The 55,551 acres covering this watershed has a diversity of habitat and species. Another estimated 1079 acres is the barren Palisades Reservoir basin which was previously lush riparian and forested habitat. North facing slopes have mixed forests of Douglas fir, subalpine fir, lodgepole pine and quaking aspen mixed with mountain maple and other mountain brush including elderberry, currant and snowberry. South facing slopes are dry, with grass, shallow soils, sagebrush and bitterbrush. Curl leaf mountain mahogany is present on south facing slopes and dry rocky ridges. Much of the mahogany has been high-lined by game years ago. Rocky Mountain juniper is present on south slopes and near the stream bottoms. A few cottonwoods are found in the lower creek bottom. Cottonwood gallery forest use to be a larger part of lower Bear Creek where it entered the South Fork of the Snake River bottom. Currently this area is mud and gravel flats below the high waterline of Palisades Reservoir, except when it is full of water. In recent years a full reservoir has been rare. This change occurred in about 1958 when the newly cut-over basin was first flooded. Refer to photo in Introduction section and appendix photos. Most aspen in the watershed appear to be seral to conifer succession depending on the microclimate.



Figure 7 (left). View of aspen clone being replaced by conifer on southern aspect on the north side of Bear Creek. Photo June 2002.

Figure 8 (right). View of south facing slope that was prescribed burned in a sagebrush type in the early 1990's. Note the dead juniper from that fire. Photo June 2002.

Wildfire ignitions are mainly from lightning and have been an important natural part of the ecosystem in these watersheds. Currently, fire has been lacking in the more forested

portions as shown in figures 7 and 10 due to fire suppression activity beginning at the turn of the century. Currently, smoke jumpers or helitack crews catch fires (mostly lightning caused) while they are small. Wildfires generally do not get a chance to develop into larger fires that may have occurred here historically. In the early nineteen nineties some prescribed fire was applied to the south facing slopes of Bear Creek. Refer to figure 8.



Figure 9 (left). View up Bear Creek showing typical mixed conifer habitat on the north facing slopes (left) and open sagebrush juniper types on the south facing slopes (right). In lower Bear Creek the bottom is characterized by sagebrush community adjacent to riparian vegetation. Photo June 2002.

Figure 10 (right). View of typical mixed conifer north slope habitat with a pocket of aspen.

RIPARIAN CONDITIONS AND BEAVER

For riparian zones the current conditions are fair to very good. Riparian and aquatic influence zones in the watershed are the most significant wildlife habitats there and beaver, when present, represent one of the most important species in the riparian zone. Refer to Hydrology and Fishery sections for more detailed information on the condition of stream habitat. There are reaches of stream bank on Bear Creek that could be better which have raw and cutting banks lacking water loving plants such as willow, dogwood and hawthorne. Areas of multiple channels provide the best opportunity for beaver to build dams and broaden the riparian influence zone with willow. Dams placed in mid channels similar to figure 11 have a hard time making it through a high spring flow. Dams placed in upper reaches are more stable and maintain and create wider floodplains covered with willow vegetation (Fig. 12). This is a desirable condition unless the system is disturbed by various factors (eg. over or under population of beaver, grazing, etc.). If dams break out, finer sediments are released downstream until repairs are made. Beaver are throughout the watershed, but found in the South Fork, middle section and upper Bear areas in higher numbers. Beaver activity in Elk Creek is also important as well as the area in the lower portion of Bear Creek above the reservoir.



Figure 11 (left). Beaver dam on the main part of Bear Creek in the lower drainage. Dams placed in the wider parts of the lower reach have difficulty making it through spring high flows, but do so in low flow years. This is good for water retention and willow regeneration in the riparian zone.

Figure 12 (right). Area of beaver dams in the upper end of South Bear Creek. These flat willow bottoms in the upper watershed have been greatly influenced by beaver activity and provide some of the most valuable habitat for a variety of wildlife species. Forested area to the right in photo is currently being planned for timber harvest as part of the Brockman Timber Sale.

Next to man, the beaver probably has more of an influence on other species than any other vertebrate in this ecosystem. So very many species in these watersheds are dependent on riparian habitat in good condition such as waterfowl, furbearers, neotropical songbirds, small mammals, big game, raptors and so forth. Beavers are important not only for fishery habitat, but for creating ponds and raising water tables which foster the continued growth and health of the willow type. Beaver seem to do better in small streams where high spring flows do not knock out the dams so easily. That is, if enough willow, etc is present for food and building material. When adjacent aspen clones are available larger diameter material is used in the dams besides willow. Aspen is often clear cut next to beaver streams and if livestock grazing is too heavy clones can be damaged.

The main riparian areas or aquatic influence zones in the watershed include the main Bear Creek, Elk Creek, West Fork Elk, Muddy, Currant, Warm Springs, Deadman, North Fork, Camp, Poison, Small, South Fork and other small tributaries. Other important wildlife habitats include small springs which feed the watershed. These often have riparian and aquatic plants important for a great variety of wildlife in the watershed. Many animal species are obligated or dependent on riparian habitats for breeding, and the interaction of these water sources with beaver can produce isolated ponds such as the one along FS trail 158. Spots like this are important because of they are isolated water sources.

Amphibians, reptiles, mammals (large and small) and birds are all attracted to areas like this in a dry upland landscape. Trail 158 pond (fig. 13) in the headwaters of Elk Creek is also important to domestic sheep grazing as a watering source and is impacted at times by

this use. Wild neotropical birds migrating from winter range in Mexico, Central and South America come to



Figure 13 (left). Frog pond created by beaver dam near a spring source in the headwaters of Elk Creek along FS trail 158. Beaver do not appear active here now, but dam is stabilized by willow growing up through the dam. Domestic sheep use it for watering also.

Figure 14 (right). Riparian area at Warm Springs Creek is unique in that it is a geothermal spring. It is also a popular designation for backcountry horse campers who impact the vegetation in the aquatic influence zone around it. This upland spring is an important water source for wildlife and it provides unique plant species.

these riparian habitats in the Bear Creek watershed during the spring nesting season and some are obligated (e.g. Yellow Warbler) or dependent (e.g. MacGillivray's Warbler) to nest only in riparian vegetation or near water. For example, figure 6 above shows conifer riparian habitat where MacGillivray's Warbler may be found, and figures 12 and 13 are typical of Yellow Warbler and Willow Flycatcher habitat. Table 2 below is sort of an extension of table 1 showing what species of riparian birds might be found in the aquatic influence zones of the Bear Creek watershed, but some TES species from table 1 may be repeated.

Table 2. Riparian bird species that may be found in the Bear Creek Watershed. Some may be just migrating. It indicates the vegetation and/or nest layers, whether the birds are riparian dependent or obligate and the effect of grazing from various studies. All of these studies have been from cattle grazing, because very little research has been done with domestic sheep. Typically, sheep grazing does not affect riparian habitats like cattle do and this may be the reason why the lack of study. Sheep grazing on the Bear Creek watershed does not usually begin until late June or early July. Much of the nesting of riparian birds is completed by late July or early August each year. The table also shows those species in decline.

Species name "*" = High Priority Breeding species in Idaho Bird Conservation Plan (2000).

Species of Concern = "SC" (by bird's name) and "D" means evidence of declining population trend (BBS 1995).

Vegetation Layer: CA= Canopy Nesting, SH= Shrub/ Mid canopy, GR= Ground level nesting.

Obligate: 90 percent or more occurrence or nesting in riparian.

Dependent: 60-90 percent occurrence or nesting in riparian.

"*" by obligate or dependent indicates conservation action is needed in geographic region.

Response to Grazing: Pos = Positive, Neg = Negative; from past studies or literature. Both= mixed, both, uncertain or unresponsive.
 Sources: Saab 1992, 1998, Kiene 1998, Bock et al 1992, Revels 1994, Peterson 1995, IPIF 2000, Patla 1995, Shaw 1993, Taylor 1986, Mosconi and Hutto 1982, Taylor and Littlefield 1986, Sedgwick and Knopf 1987, Krueper 1993, USDI 1998, IPIF, 1998, Croch 1982, Knopf et al. 1988, Medin and Clary 1990, Medin and Clary 1991, Page et al 1978, Schulz and Leininger 1991, Monson 1941, Olson 1974, Reynolds and Trost 1980 and 1981, Rich and Rothstein 1985, Rotenberry and Knick 1992, Wiens 1985, USDI, BBS 1995, Paige 1995.

<u>SPECIES</u>	Veg Layer	RIPARIAN OBLIGATE	RIPARIAN DEPENDENT	Species Usual Response to Grazing if Known
Killdeer* D	GR	Y		Pos
Canada Goose	GR	Y		Pos
Yellow Warbler* D	SH	Y*		Neg & Pos
Yellow-breasted Chat D	GR SH	Y*		Neg & Pos
Broad-tail Hummingbird	GR SH	Y		Neg & Pos
Red-winged Blackbird D	SH GR	Y		Neg & Pos
Song Sparrow D	GR	Y		Neg & Pos
American Dipper*	GR	Y		Neg
Common Yellowthroat D	GR	Y*		Neg
Veery SC D	GR SH	Y*		Neg
Willow Flycatcher*	GR SH	Y*		Neg
Wilson's Warbler*	GR SH	Y*		Neg
	CA			
Lincoln's Sparrow D	GR	Y		Neg
Orange-crowned Warbler	GR SH	Y*		
Barrow's Goldeneye*	CA GR	Y		
Cinnamon Teal*	GR	Y		
Sandhill Crane*	GR	Y		
Trumpeter Swan*	GR	Y		
Yellow-billed Cuckoo* D				
(likely not nesting)	SH CA	Y*		
Bald Eagle	GR CA	Y		
Spotted Sandpiper D	GR	Y		
Belted Kingfisher D	GR SH	Y		
Bufflehead	CA	Y		
Common Snipe	GR	Y		
Common Merganser	GR CA	Y		
Common Goldeneye	CA GR	Y		
Double-crested Cormorant	CA GR	Y		
Great Blue Heron	CA	Y		
Green-winged Teal	GR SH	Y		
Mallard	GR	Y		
Northern Pintail	GR	Y		
Osprey	CA	Y		
Red-necked Phalarope	GR	Y		
Sora	GR	Y		
Yellow-headed Blackbird D	SH GR	Y		
Wood Duck	GR CA	Y		
Black-billed Magpie*	SH		Y	Pos
Lewis Woodpecker* D	SH CA		Y*	Pos
Dusky Flycatcher* D	SH		Y	Pos
House Wren	GR CA		Y	Pos
Mountain Bluebird	CA		Y	Pos
	SH			
Black-headed Grosbeak	SH CA		Y	Pos & Neg
Gray Catbird D	GR SH		Y	Pos & Neg

Red-naped Sapsucker D	SH CA	Y	Pos & Neg
Western Wood-pewee D	SH CA	Y	Pos & Neg
Calliope Hummingbird*	GR SH	Y	Neg & Pos
Eastern Kingbird D	SH CA	Y	Neg & Pos
Tree Swallow D	SH CA	Y	Neg & Pos
White-crowned Sparrow D	GR SH	Y	Neg & Pos
Warbling Vireo D	CA	Y	Neg & Pos
MacGillivray's Warbler* SC D	GR SH	Y	Neg
Swainson's Thrush SC D	GR	Y	Neg
Swainson's Hawk	CA	Y*	Neg
American Goldfinch D	GR SH	Y	Neg
American Kestrel	CA	Y	Neg
Cedar Waxwing D	SH	Y	Neg
Cordilleran Flycatcher	GR SH	Y	Neg
Fox Sparrow D	GR	Y	Neg
Lazuli Bunting D	GR SH	Y	Neg
Northern Oriole D	SH CA	Y	Neg
Northern Harrier	GR	Y	Neg
Red-tailed Hawk	CA	Y	Neg
Black-chinned Hummingbird*	GR SH	Y	
Rufous Hummingbird* D	CA	Y	
Blue Grouse*	GR SH	Y	
Cooper's Hawk	SH	Y*	
Northern Goshawk*	SH CA	Y*	
American Crow	CA	Y	
Black-capped Chickadee	SH CA	Y	
Bank Swallow D	SH CA	Y	
Barn Swallow	Cliffs	Y	
Cliff Swallow	Bldgs	Y	
Common Grackle	Cliffs	Y	
Downy Woodpecker	CA SH	Y	
Northern Rough-winged Swallow D	CA	Y	
Red-eyed Vireo D	GR	Y	
Long Eared Owl	Banks	Y	
Western Screech Owl	SH CA	Y	
Brown Creeper*	CA	Y	Pos
American Robin	CA		Pos
Brown-headed Cowbird	SH		Pos
Common Nighthawk	GR		Pos
Evening Grosbeak	CA		Pos
European Starling	CA		Pos
Golden Eagle	GR		Pos
Mountain Chickadee	Cliff		Pos
Pine Siskin D	CA		Pos
Ruby-crowned Kinglet	CA		Pos
Brewer's Blackbird D	GR SH		Pos & Neg
Mourning Dove	CA		Pos & Neg
Northern Flicker	SH		Pos & Neg
Western Tanager* D	CA		Neg & Pos

Chipping Sparrow	SH GR	Neg & Pos
Dark-eyed Junco D	GR	Neg & Pos
Rufous-sided Towhee D	GR SH	Neg & Pos
Vesper Sparrow D	SH	Neg & Pos
Western Meadowlark D	GR	Neg & Pos
Brewer's Sparrow* SC D	GR SH	Neg
Hammond's Flycatcher* D	CA	Neg
Cassin's Finch D	CA	Neg
Yellow-rumped Warbler D	SH CA	Neg
Flammulated Owl*	CA SH	
Sharp-shinned Hawk*	CA	
Olive-sided Flycatcher* D	CA	
Ruffed Grouse*	GR	
Sharp-tailed Grouse*	GR	
	SH	
Green-tailed Towhee	GR	
Great Gray Owl	GR CA	
Black-throated Gray Warbler	SH CA	
Common Raven	CA	
Golden-crown Kinglet	CA	
Great Horned Owl	CA	
Hairy Woodpecker	CA	
Hermit Thrush D	SH GR	
Northern Pygmy Owl	CA	
Pine Grosbeak	CA SH	
Peregrine Falcon	Cliffs	
Prairie Falcon	Cliffs	
Rock Doves	GR	
	Cliffs	
Red-breasted Nuthatch	CA	
Red Cross-Bill	CA	
Northern Saw-whet Owl	CA	
Solitary Vireo*	CA	
Steller's Jay	CA	
Townsend's Solitaire	GR CA	
Turkey Vulture	Cliff	
	GR	
Violet-green Swallow	CA	
White-throated Swift	Cliff	
	GR	
Wild Turkey (introduced recently in Swan Valley)	GR SH	
	CA	

The channel of Bear Creek below the high waterline of Palisades Reservoir can extend downstream for 3 miles depending on how low the reservoir is. This stream stretch is denuded and impacted by high-water. The stream here is exposed more months out of a year than it is inundated. Even though the riparian and forested vegetation that once grew there is gone, it is still an attraction as a riparian zone. Many animals, large and small, obtain water here. Fish also move up and down the stream and are a food source for terrestrial wildlife. The mud flat in the upper part of the Bear Creek arm provides good habitat for waterfowl, shorebirds and waterbirds. Bald eagles nest very closeby on Van Point and are regularly seen flying and foraging up and down Bear Creek. This is part of the eagle territory (USDA 1985). Refer to figures 15 and 16.



Figure 15 (left). Bear Creek channel below the Palisades Reservoir highwater line. Wildlife are attracted to this 3 mile stretch when the reservoir is empty. It is a popular ATV play area also.

Figure 16 (right). Mud and gravel flats along the Bear Creek channel. Photo shows domestic sheep using the area.

Both domestic sheep (corral is located next to Bear Creek above waterline) and all terrain vehicle use is evident in this area. The FS encourages the ATV users to use the reservoir basin below high waterline to direct them away from more sensitive cross country use above the waterline. The area near the reservoir stream called “Tissue Point” is a very popular off road vehicle dispersed camping area which has hawthorne, willow and cottonwood trees, and the riparian vegetation here is impacted by this use.



Figures 17 and 18. Shows sheep corral (left) with view out the Bear Creek Canyon Arm and dispersed camping at Tissue Point (right) where Bear Creek enters Palisades Reservoir.

Big Game Habitat

The Bear Creek watershed contains important mule deer and elk range on the Palisades Ranger District. It is in Idaho game management unit 66. Along with the Fall Creek, Garden and Pritchard Creek watersheds this is an important spring and fall migration corridor for herds that concentrate during the winter at the Tex Creek Wildlife Management Area which is managed by the Idaho Department of Fish and Game. The Fall Creek, Garden and Pritchard Creek watersheds provide winter range as well. Winter range for mule deer within the watershed was found on the south facing slopes of Bear Creek on the north side of Palisades Reservoir upstream to the North Fork of Bear Creek according to Haderlie, Hansen and Reese (pers. Comm. 2002) during the 1960's. Haderlie estimated that there may have been upwards to 500 head of mule deer wintering here. J. Hansen (2002) remembers seeing golden eagles feeding on carcasses as he rode the range in the winter with Idaho Fish and Game officer Dick Brody, and bald eagles were there as well. Currently, not all of this area is mapped as winter range in the Revised Targhee Forest Plan (USDA 1997). Refer to winter range maps shown as prescription 2.7a in maps 1 and 2 in the Appendix.

Moose also spend the entire year in the watershed and are more concentrated along the drainage bottoms in the winter. The watershed is important summer range for elk, mule deer as well as moose. Elk and deer migrating through unit 66 have been studied by the Idaho Department of Fish and Game. A considerable amount of data have been collected on these herds in the recent decades and reports are available (IDFG 2001, Brown 1982, Thomas 2001, Naderman 2001).



Figure 19 (left). Winter Range on the south-facing slopes of Bear Creek north of Palisades Reservoir. This is prescription 2.7a in the Revised Targhee Forest Plan. Note high-lined curl leaf mountain mahogany from years of heavy game browsing.

Figure 20 (right). Shows native mule deer winter range sagebrush habitat mixed with mahogany, bitterbrush and mountain brush. Some of the range is overlapped with domestic sheep grazing, but sheep numbers have been greatly reduced in past 40 years.

The mule deer population at the current time is believed to be low compared to the highs of the early 1990's and 1960's. Refer to table 3 below.

Table 3. Unit 66 Mule Deer Population Data (IDFG 2001)

Year	1965	1968	1973	1974	1976	1983	1984	1991 ¹	1994 ²	1997	1999
Total Deer	1,615	1,995	381	600	231	579	242	1,098	450	667	536

¹ Partial count; stratified random sample of sub-units counted.

² Poor counting conditions; lots of bare ground, no new snow, many deer in conifer.

The Idaho Department of Fish and Game objectives for unit 66 is to maintain a minimum of 15 bucks per 100 does in post season, and to maintain a minimum of 30 percent 4 point and larger bucks in the general harvest. The objectives for the analysis area (units 66 and 69) have been met. Counts estimate 21 bucks per 100 does and 41 percent of bucks were \geq 4 points in 1998-2000. Unit 66 has a long running late-season controlled buck hunt, and this hunt is very popular (IDFG 2001). If the current series of mild winters continues this highly productive population will continue to respond positively.

Elk population numbers are currently doing well in the Unit 66 and 69 analysis area and this has been a popular hunting area with the public. Refer to table 4.

Table 4. Shows Upper Snake Region Elk Population Data, Units 66 and 69 from 1970 –2000 (IDFG 2001).

Year	70-71	79-80	82-83	83-84	88-89	90-91	91-92	94-95	96-97	99-00
Raw Count	1333	2040	1772	1918	3065	3509	3181	3589	3110	4256
Sightability Estimate	--	--	--	--	--	3781	4085	3804	3623	4293

There is more to elk habitat management than the total number of animals. Wildlife numbers always fluctuate based on a variety of factors found in nature (eg. habitat conditions) as well as man caused factors. One of the current problems facing elk and elk hunters in the Bear Creek watershed as well as adjacent Fall Creek watershed is the apparent displaced distribution of the elk during the summer and fall seasons to areas outside the watershed to the south. Refer to figure 22.

The population objective for the Tex Creek zone is to winter approximately 2,500 cows and 525 bulls, of which 300 should be adult bulls. Recent aerial surveys (1999/2000) indicate that cows are at objective and bulls over objective. However, due to the fact that a number of elk from Unit 66A winter in this zone and that objectives differ between the Tex Creek and Diamond Creek zones, it is unknown what extra harvest opportunity may be available. Management is coordinated with Unit 66A of the Diamond Creek zone where a major portion of the wintering Tex Creek elk are in summer and fall (Naderman 2001, IDFG 2001).

Controlling the elk population has driven harvest strategies. Historical overharvest of bulls and underharvest of cows has been addressed with implementation of the dual tag zone system and increased antlerless permits on late hunts (Naderman 2001, IDFG 2001).

Mule deer and elk appear separated on the winter range and there are no known conflicts between elk and moose. Wintering elk and deer are not artificially fed except on an emergency basis. This has occurred recently in the winters of 1988-1989 and 1992-1993 near Tex Creek, and the IDFG does not want to feed because of the closeness to known brucellosis infected herds in Wyoming and Idaho (Naderman 2001, IDFG 2001).

In 1978, 1979, and 1980 the IDFG conducted radio telemetry studies (Brown 1982) of elk wintering on Tex Creek WMA, the results of which indicated that these elk spent the summer primarily in Units 66 and 66A with some going to Units 69 and 76. This work was duplicated in 1998-2000 with results showing the same trends in distribution and movement. Of concern, however, is the low proportion of marked animals remaining in the Tex Creek zone (including the Bear Creek watershed) during the summer and fall (Naderman 2001, IDFG 2001, Thomas 2001).

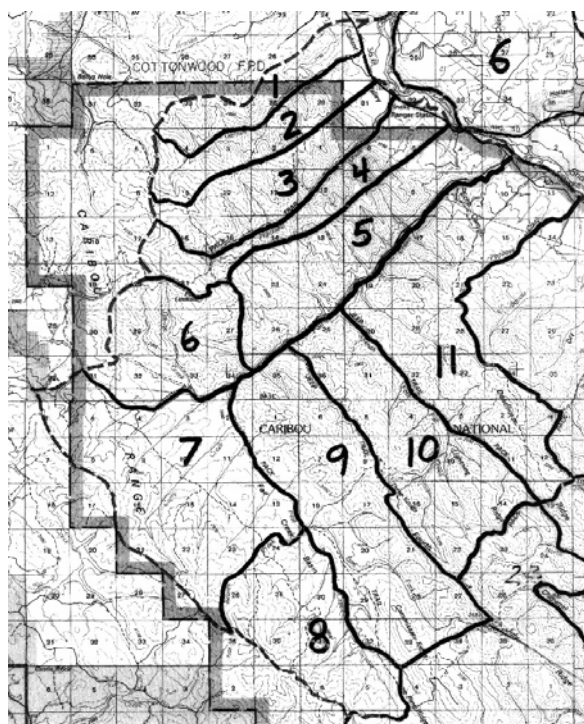


Figure 21. Map Subunits used to count wintering mule deer and elk by the Idaho Dept. of Fish and Game which are used to manage hunts in the Bear Creek watershed and other areas of hunt unit 66.

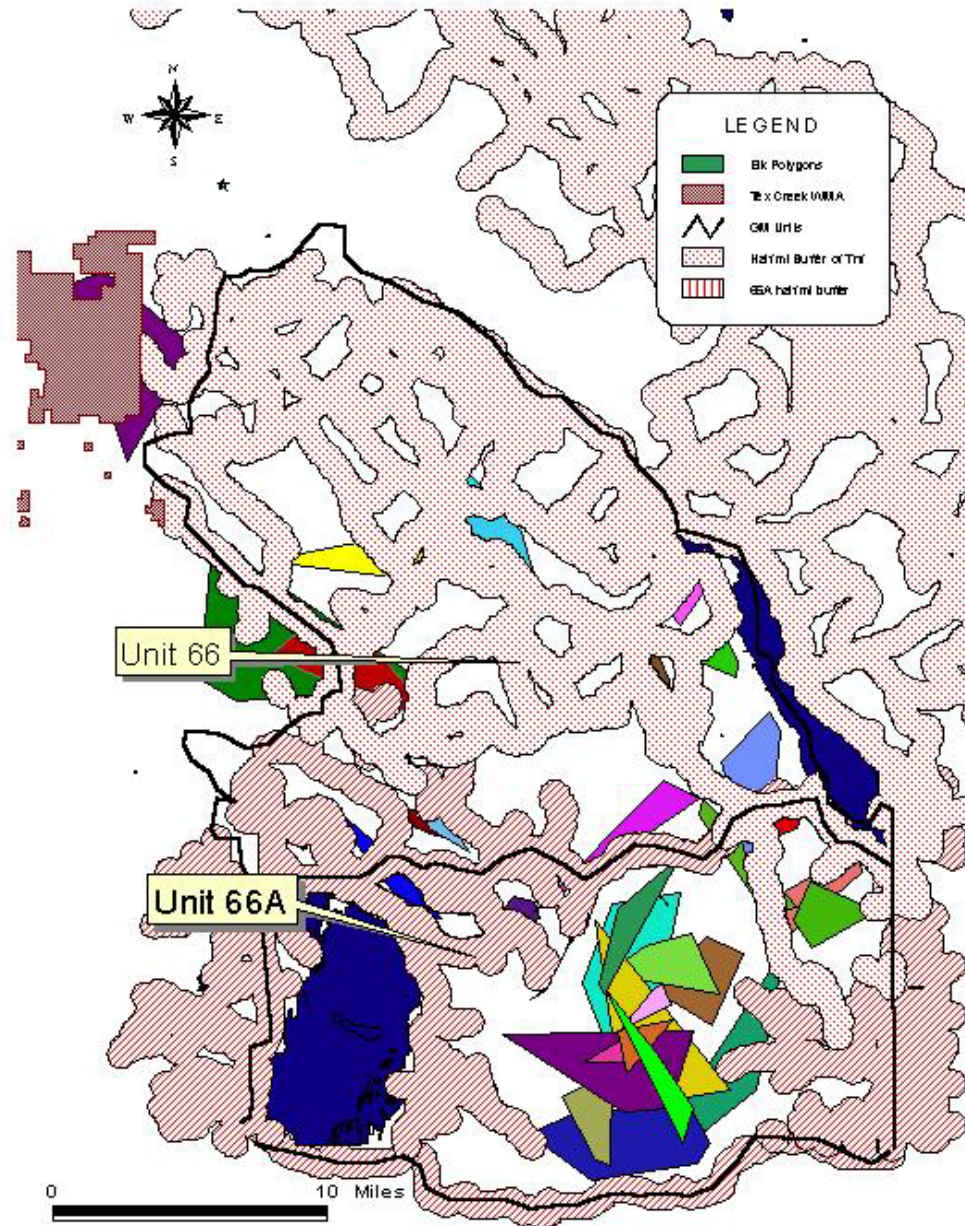


Figure 22. This shows results of a two year study including the Bear Creek watershed of 34 radio collared elk (each polygon is one elk) which were trapped at the Tex Creek winter range and were then followed year long. The red shaded area is within one half mile of any motorized road or trail per Forest Service travel maps. It shows that most of the radio marked elk went to the Unit 66A roadless area (Thomas 2001).

Table 5. Idaho Fish and Game Elk Count data for winter of 1999 –2000 showing classification and numbers of animals and other habitat features in different Sub units of Game Management

Unit 66. Refer to Subunit map in figure 21. Most all count units are outside, but border the Bear Creek Watershed.

Sub-unit	Stratum	Total	Cow	Calve	Spike	Rag horn	Ad Bull	Un-Class	Activity	% Snow	% Veg	Veg Class
6601	1	0	0	0	0	0	0	0	0	0	0	0
6602	1	0	0	0	0	0	0	0	0	0	0	0
6603	1	3	0	0	0	0	3	0	2	80	5	4
6604	1	3	0	0	0	0	3	0	2	80	5	4
6605	1	30	13	8	6	3	0	0	3	10	10	2
6605	1	22	16	3	2	1	0	0	3	0	0	2
6606	1	2	0	0	0	1	1	0	3	0	5	2
6607	1	37	24	6	5	2	0	0	3	90	5	2
6607	1	62	30	21	7	4	0	0	3	100	0	2
6609	1	8	0	0	0	7	1	0	3	50	5	2
6609	1	26	0	0	0	21	5	0	3	100	80	5
6609	1	4	0	0	0	4	0	0	3	50	50	5
6609	1	21	9	9	3	0	0	0	3	10	5	2
6609	1	96	46	29	12	8	1	0	3	10	5	2
6609	1	19	5	10	4	0	0	0	3	10	5	2
6609	1	204	128	46	17	13	0	0	3	10	5	2
6609	1	3	2	1	0	0	0	0	3	0	5	2
6610	1	0	0	0	0	0	0	0	0	0	0	0
6611	1	2	2	0	0	0	0	0	2	0	0	2
6611	1	3	0	0	0	3	0	0	2	0	0	2
6611	1	114	73	34	5	2	0	0	2	0	0	2
6611	1	8	6	2	0	0	0	0	2	0	10	3
6611	1	3	0	0	0	3	0	0	3	0	0	2
6611	1	21	12	5	2	2	0	0	3	0	5	2
6611	1	109	60	36	7	7	0	0	1	0	5	2
6611	1	1	0	0	0	1	0	0	3	80	5	2
6611	1	54	29	19	6	0	0	0	2	80	5	2
6611	1	8	8	0	0	0	0	0	2	0	0	2

Using a point count method (240 points) on orthophoto quad maps and aerial photographs it is estimated that 47 percent elk hiding cover and 53 percent forage area is found in the 55,551 acre watershed analysis area. Much of the best hiding cover was measured in the Upper and South Fork of Bear areas and Van Point at 54 – 58 percent. The South Fork area is also the area identified as Prescription 5.1.4b, “Timber Management for Big Game Security Emphasis”.

The least amount of elk cover was found in the south slope winter range on the north side of Bear Creek at 34-41 percent, with the better amounts of forage area (59-66 percent) there as well. This is believed to be a better estimate of the actual on the ground cover/forage ratio than is presented in Process Paper D for the Revised Targhee Forest Plan (USDA 1997). Refer to figures 23 and 24 related to big game cover.



Figure 23 (left). Photo of big game cover area in the Van Point area of the Bear Creek arm of Palisades Reservoir showing the edge at the reservoir high water line where cover was removed in the 1950s. Even though the shoreline is visited the isolation here from motorized vehicles and human disturbance is an important factor for cover and game security.

Figure 24 (right). Coniferous big game cover in the upper South Fork Bear Creek area. This a popular elk hunting area.

Threatened, Endangered and Sensitive Species (TES)

The Bear Creek watershed still has many of the same species originally there before white settlement. Refer to the Wildlife Characterization section for a list of Forest Service sensitive species. Federally listed threatened or endangered species that occur here or may occur here include Bald Eagle, Canada lynx, gray wolf and grizzly bear. Whooping Cranes are very rare at this time, even at Gray's Lake, which is about 6 miles to the south. This area was the center of a national recovery effort not many years ago. They are now considered extinct in the intermountain west. Occasional unconfirmed reports of grizzly bear and gray wolf have been received in or near the watershed. Lynx were living and reproducing in western Wyoming a few years ago within 25 miles of the watershed and were traveling great distances to the north and south. At the current time all of these species, except the Bald Eagle would be rare in the watershed. Bald Eagles are reproducing in the watershed and are often seen flying Bear Creek and the Bear Creek arm of the reservoir.

Bald Eagles nest along the west side of Palisades Reservoir and the South Fork of the Snake River below the dam. One of the Van Point eagle territories is located in the

watershed on the north side of Van Point and the shoreline of the reservoir here is known to be a popular Eagle feeding area (USDA 1985).

Table 6. Activity and productivity of the Van Point North Bald Eagle Nest territory (18-IS-03) on Palisades Reservoir in years shown.

Nesting year	Productivity	Advanced Young	Comments
1978	Active, Successful	2	per John Weaver
1979	Unknown	?	
1980	Unknown	?	
1981	Active, Unsuccessful	0	
1982	Active, Successful	1	
1983	Active, Successful	2	
1984	Active, Successful	1	
1985	Active, Unsuccessful	0	
1986	Active, Successful	1	
1987	Unknown	?	
1988	Active, Successful	1	1 banded
1989	Active, Successful	1	1 banded
1990	Active, Successful	1	
1991	Active, Successful	1	1 banded
1992	Active, Successful	2	
1993	Active, Unsuccessful	0	All reservoir nests failed except Hoffman; wet spring
1994	Active, Successful	2	2 banded, new nest found on south side of Van Point
1995	Active, Unsuccessful	0	
1996	Active, Unsuccessful	0	
1997	Active, Successful	1	
1998	Active, Successful	1	
1999	Active, Successful	1	
2000	Active, Successful	2	
2001	Active, Successful	2	
2002	Active, Successful	1	

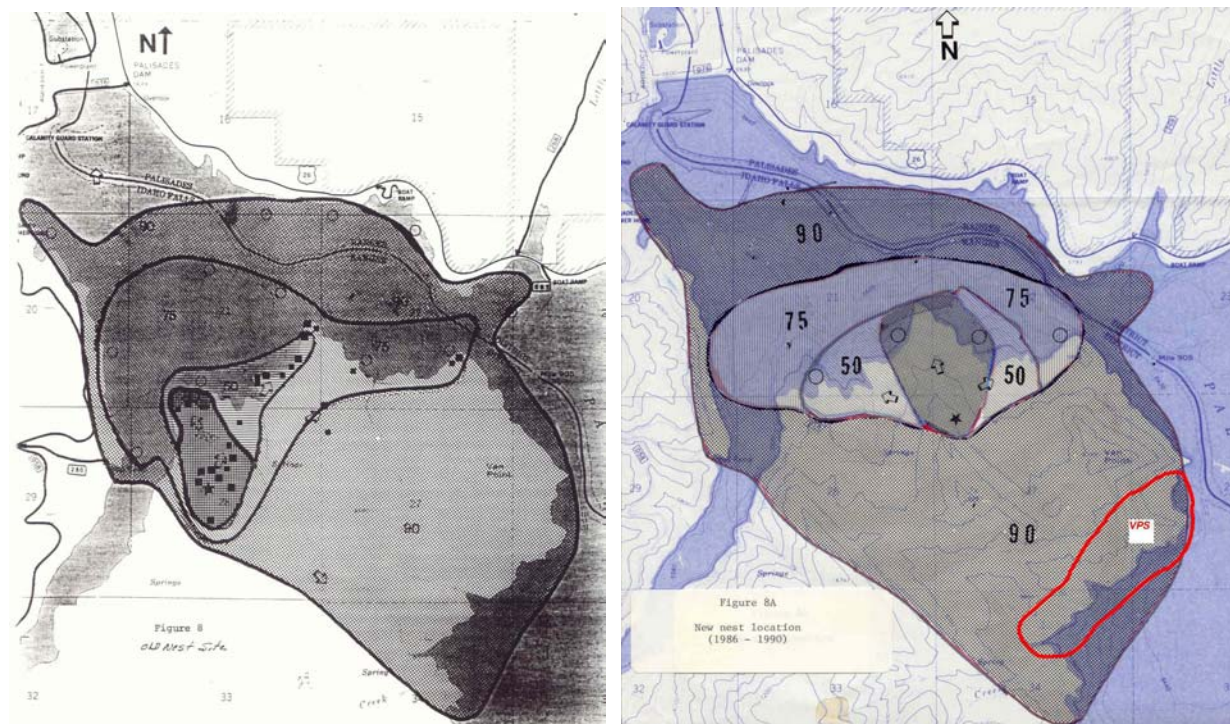


Figure 25. Map on left shows Bald Eagle habitat use at the Van Point North breeding territory. The star on the left map represents the nest location in 1985 and prior and data on feeding and activity collected in the early 1980's. The star on the right map shows the location of the nest site from about 1986 – 1990 and the current location (2002) is not too far from it. On the left map the open circles are observed fishing sites. Black squares are favored perch sites (larger squares depict more frequently used perches). Arrows represent frequently used flight routes. Zone 1 is shown as the smallest shaded area. Zone 2 which encloses the 75 percent use of adult Bald Eagle activity is a different shading. Enclosing 90 percent use area of adult Bald Eagle activity, zone 3, is depicted as the largest area. Zone 4 represents 50 percent of adult Bald Eagle use. These maps are somewhat outdated, but represent important use patterns in the area in the Van Point North territory. A new Eagle nest called Van Point South was detected in 1994 and is shown on map as “VPS” with an estimated 50 percent primary use area on the south shore.

The reader is referred to the Management plan for Bald Eagles and Osprey of Palisades Reservoir prepared by M. Whitfield and others (USDA 1985). A large amount of data was collected as to how Eagles use this area and it was used to delineate territory zones used by the Eagles here. Though dated, this information is still useful and relevant to birds nesting there now. The Bear Creek arm is one of the more important Eagle feeding areas on the whole reservoir. Refer to figure 25 maps. Bald Eagle productivity at the Van Point North territory is shown in table 6. The earliest record of productivity was in 1978, but R. Brunson indicated nesting being here in 1969.

The Revised Targhee Forest Plan (RTFP) calls for monitoring of many TES species including Bald Eagles, Peregrine Falcons, Goshawks, Great Gray Owls, Flammulated Owls, etc. The Calamity furbearer transect is located partly in the watershed area being consider here as is the Calamity owl transect. Data for these transects are available. Refer to the Forest Monitoring Report (USDA, 2001, 2002) for more details. A Flammulated Owl was heard near First Canyon by a FS volunteer in the spring of 2002 (pers. comm. Dr. R. Grimshaw).

Current conditions of aging forests both in the conifer and aspen types has probably improved nesting and foraging conditions for some sensitive species like the Flammulated Owl. They appear to be more common now than previously thought. The natural conversion of aspen to conifer is resulting in dying and decadent aspen clones with increasing conifer preferred by some species. Excellent habitat occurs for Northern Goshawk and Great Gray Owls and probably Boreal Owls. Three Toed Woodpeckers would also occur. See figures 26 and 27. Down dead woody material is also at the higher level providing potential habitat for lynx or fisher if they occur here. Both are rare species. Large old snags with woodpecker cavities are common in north slope Douglas fir which is providing good to excellent habitat to sensitive species like the Flammulated Owl and Townsend's Big-eared bat. Brooms in old Douglas fir and old Goshawk nests provide good nesting platforms for Great Gray Owls.

Currently, there are motorized roads and trails in the watershed and winter snowmobile use is increasing in popularity and is greater than they have ever been before. This is an impact to TES species in that not only habitat is directly impacted by damage to vegetation, increased siltation into the streams resulting in impacts to prey (eg. trout for Eagles), but also disturbance to them during the birthing season and displacement (eg. lynx).

In the recent past lynx have been reported near Skyline Ridge (outside, but near the watershed) in 1990 (Lewis and Wenger 1998) and tracks of lynx (unconfirmed) in Fall Creek (Lewis and Wenger 1998). Grizzly and wolf observations and sign have also been reported in the past few decades in or near the watershed by bear baiters, Fish and Game biologist, ranchers and county agent (Alford 2001). In early 1990's Lynn Merrill, Conservation Officer in Swan Valley reported definite grizzly bear tracks between Pritchard and Garden Creeks (Merrill 2001). In 1999 Merrill et al (1999) reported the Palisades area as being one of the most highly productive habitats of 3 areas in the state of Idaho for grizzly bear. The others were in northern and western Idaho. Bear Creek watershed has a high level of roadless area which would make it a significant part of that area. Their scientific models indicated the Palisades area to be more biologically suitable than currently designated grizzly bear management (BMUs) areas on the Targhee in Idaho west of Yellowstone Park. Re-run of their models for the Greater Yellowstone area indicated similar results for the area (Merrill et al, 2002).

No problems with grizzly bears or wolves have been reported in recent years related to grazing or recreation uses, except there was one report of an aggressive bear in 1990 by a hunter on Big Elk Mountain (Alford 1990 interviewed him). Since the transplant of gray wolves in Idaho and Wyoming in the mid 1990's a confirmed wolf was found and shot in the area south of here near Soda Springs. Another sighting in May 2001 within a few miles of the watershed appears to be a reliable report. Refer to table 7 below.

In the spring of 2002 a radio collared wolverine was tracked crossing along the north side of the Bear Creek watershed and across the Palisades Ranger District (Wigglesworth 2002). It is known that this young male had traveled as far as northern Yellowstone Park and almost to Pocatello, Idaho where he returned through or near the Bear Creek area. He later traveled to near Pinedale, Wyoming. Wolverine tracks were also found during the

late winter of 2002 in the Caribou Mountain area on the Soda Springs Ranger District just south of the Bear Creek watershed (Aber and Orme 2002 and Woodcock 2002). It is very likely that this rare and wide spread species has individuals in the area on a yearly basis. No reproductive habitat is known in the watershed.

Table 7. Summary of more recent reported observations of wolves on the District. The Palisades Ranger District was historical habitat for the gray wolf. There is a chance that wolf have occurred in these areas from time to time even now in the late 1900's. Even before the transplants in Idaho and Wyoming in the mid 1990's reports were heard of.

Date	Location	Type of Sighting	No.	Rating
Oct 81	T2N R45E Sec.11	Animal	4	Possible
Oct 82	T2N R42E Sec. 9	Animal	2	Possible
Oct 82	T5N R42E Sec.32	Animal	1	Possible
Dec 82	T1S R45E Sec.11	Tracks	1	Possible
Nov 83	T1N R45E Sec.19	Tracks	1	Possible
Jul 91	T2N R41E Sec. 3	Animal	1	?
Sum 91	T2N R41E Sec ? Birch/Meadow C.	Animal SCS personnel	? ?	?
Sum 91	T2N R41E Sec.? Birch Creek	Animal Pvt. Landowner (Jensen)	? ?	?
Early '90's	T2N R41E Sec. ? Meadow/Deep Creek	Tracks S.Haynes-IDFG	?	?
Sep 92	T2N R45E Sec 5	Howling	1	Probable
Oct 93	T1N R45E Sec.32	Animal	1	?
May 14, '96	T3N R44E Sec.24 Pine C Pass PR news article	Animal Black	1	Probable
May 20, '96	T3N R44E Sec.24 Pine C Pass, ¼ East	Animal Black also Per M.Bogle-FS	1	Probable
May 96	¼ mi. past SFSR Trailhead on bench Above river	Track Black also Per M.Bogle-FS	1	?

May 2001	T3S R43 E Sec. 12 NE of Grays Lake	Doug Heyrend (Forester Soda Sprs RD & Rob Harris	1	Both said it was too big for coyote
Oct 19, 2001 0800 am	T5N R43E Sec 13 NE, NW, NE SE Packsaddle Lake	Tracks, urine, male Leon Bleggi Ryan Clark	1	Followed tracks, urinated on snow & salt lick, 6"long X 5" wide measured tracks
May 12-16, 2002	T1N R45E Sec.31	Tracks at pond1 and on trail casts at Palis.RD		Reported by Trevor Hill, RJ Hemingway, Hemingway, Bud Alford

Some information was reported by Steve Haynes (1993) the manager of the Tex Creek IDFG big game winter range which borders the Forest. A migration of elk and deer occurs each spring and fall to and from the area along the South Fork of the Snake River. We had made a request for the U.S. Fish and Wildlife wolf search team to look at areas in the winter of 1993-94, but their tight schedule in other parts of the State prior to the central Idaho and Yellowstone transplants did not allow for it.

Another rather reliable observation was made by Twitchell, an INEEL biologist (1992) in North Rainey Creek over the hill from Tie Canyon, which is south of Pine Creek highway. This was made on September 9, 1992, while he was elk hunting during the archery season. When he bugled for elk a single animal was heard howling, apparently responding to the call. He also saw a lot of large tracks, but did not measure them. Twitchell's sighting was rated as "probable". Note also an older (1982) probable sighting that was collected by T. Kaminski immediately adjacent to the North Moody area. Most recently (May 2001) two FS employees have reported a wolf sighting about 5 miles to NE of Gray's Lake and others saw tracks in north Big Holes (Oct 2001), and May 2002 in Swan Valley.

Table 8. A summary of more recent observations we know about in the vicinity of the Palisades Ranger District for Grizzly Bear.

<u>Date</u>	<u>Location</u>	<u>Sighting</u>	<u>No.</u>	<u>Rating</u>
1980's ?	Upper Tex Crk Drainage	Animal Tracks	1	?
Jun 1987	T1N R42E Sec. 4 Dirk Burgard, Guide	Animal- videotaped (unk where)	1	?
Jun 1988	T1N R42E Sec. 4 Dirk Burgard, Guide	Animal- videotaped (unk where)	1	?
Oct 1989	T2N R44E Sec. 12	Animal-photos	4	Confirmed

Nov 1990	T2S R44E Sec. 23	Animal-aggressive	1	?
Fall 1987	T1N R42E Sec. 8 D.Burgard, guide	Tracks	1	?
Early 90's	T1N, R43E, Sec 5 Lynn Merrill, IDFG Duane Scott, Rancher	Tracks	1	?

Note: A set of observations of interest are those in the upper Garden Creek. The observations were made by a local guide who had videotaped the bear at his bait station in about 1988. He had kept a detailed field notebook and his observations were as follows: in 1987, on June 24 from 4:30 – 7:15 pm, June 25 from 6:00 – 8:00 pm and on June 29 from 7:45 – 11:00 pm; and in 1988 on June 19, 20, 21, 29 and 30. He said that he thought he sent the tape to the U.S. Fish and Wildlife Service in Boise to someone in that office, but could not remember the name. We have not found the video at either the IDFG or USFWS. Dirk also followed tracks in '87. FS has photos of Oct 89 sightings and they were confirmed to be grizzlies by GB team member Dick Knight. Of the early 1990's tracks between Fall and Pritchard L. Merrill said they were definitely GB tracks.

MOTORIZED INFLUENCES ON WILDLIFE

Currently, the increasing proliferation of cross country trails and all terrain vehicles (ATVs) in addition to the legal roads and motorized trails has probably created the greatest influence on wildlife and habitat than any other use on several other watersheds on the Palisades Ranger District, but this does not appear to be the case for the Bear Creek watershed. Some watersheds with major amounts of motorized use include the Fall Creek watershed immediately to the north of Bear Creek and the Moody area farther north on the Targhee portion of the District. Use in the Bear Creek watershed is limited to small areas near existing roads and wider trails. Most motorized trails currently in the watershed are too narrow for vehicles wider than motorbikes. Use by motorbikes is heavy and can be found in the watershed every week, particularly during summer weekends. Much of this use ties into motorized trails in the Fall Creek watershed to the north which tends to have more use by wider ATVs. Refer to the Recreation section.

Warm season motorized use is associated with big game hunting during the fall season and spring bear hunting where many hunters create new travel routes in search of game, to retrieve game or find baiting sites. This ATV use in Idaho has more than tripled in the past 7 years (Interagency ATV Group 2001). Summer time ATV and motorcycle users also contribute to the increase of new cross country routes and steep hillside climbs for recreational purposes. Motorized travel in the watershed is regulated by the Forest Travel Map which is available to the public (USDA 2000). The main purpose for the regulation is to protect wildlife and habitat. Refer to discussion in the big game section as well as others.

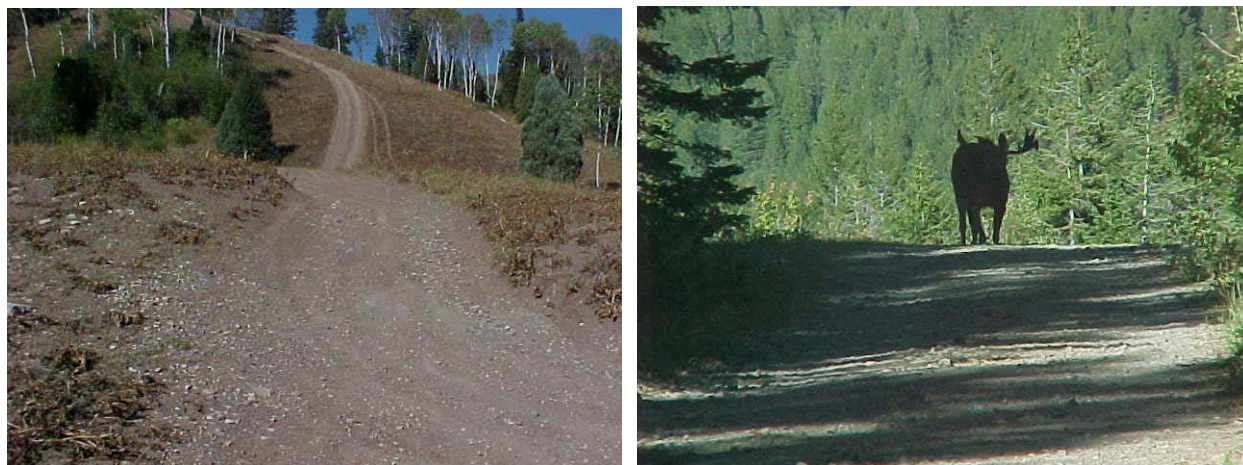


Figure 26 (left). Illegal motorized trail that has been developed in the Elk Creek drainage of the Bear Creek watershed. This is not a major problem watershed wide however.

Figure 27 (right). Wildlife can be affected positively by motorized travelways by providing easier travel routes to widely scattered food or cover sources and for migration. This use can however increase conflicts, especially if roads are upgraded and vehicle speeds increase then more mortality by collisions will occur. Moose for example will use winter snowmobile routes extensively, but are on occasion harassed by impatient snowmobilers not willing to give the animals space. Winter routes also provide access to predators into deeper snow country and this is a problem for some declining species such as the lynx and wolverine which may have to now compete with coyotes, bobcats and fox for prey items.

It is difficult however to patrol and enforce the area regulations all the time. During the past several years during the fall hunting seasons (2001 – 2002) the Forest Service and Idaho Department of Fish and Game have cooperated in joint patrols and focused on controlling illegal motorized use by hunters. This has occurred in the Elk Creek and lower Bear Creek portions of the watershed adjoining the Poker Peak area as well as the northern edge that joins the Fall Creek watershed. Under the leadership of District Ranger Ron Dickemore this has been a very effective program and often utilizes aircraft spotters. The results have been significant and noticeable and increasing compliance by motorize users has occurred. Leading media stories in the news have occurred due to this effort in part of the watershed. Refer to figures of trails being physically closed to motor vehicles.

Other motorized use damage to wildlife habitat is caused by larger regular sized vehicles, particularly along the a few riparian zones such as South Fork of Bear Creek. There is only a few areas with this problem in the watershed along FS roads 058 and 083 next to streams or water in the aquatic influence zones.



Figure 28 and 29. Closure of trails designated for non-motorized use in the upper part of the Bear Creek watershed in Elk Creek in 2001 as part of the overall effort to gain compliance for the Targhee Travel plan. This was done by pulling over trees and placing boulders for the first part of the trail and this has been very effective along with increasing interagency patrols.

Refer to the Big Game, Current Condition section above for more details on effects to elk habitat. Figure 22 shows results of a radio tracking study by Idaho Department of Fish and Game (Thomas 2001) where high levels of motorized route (only legal routes considered in the study) appears to be causing elk herds (based on this radio marked sample) to travel through the Unit 66 summer habitat to a more suitable roadless area in hunt unit 66A. This may be causing problems for managing the elk herd there. The Thomas (2001) study as well as the work done by Brown (1982), appears to be a field validation for the large and ever increasing volume of research documenting the impacts of motorized access on elk habitat selection and vulnerability (Markum and Edge 1991, Perry and Overly 1976, Hershey and Legee 1976). Cole et al (1997) found that elk movements decreased when vehicular access was tightly regulated and suggested that overall herd fitness would improve with reduced disturbance. Funding for improving roads have been more readily available than those for closing illegal ones, and some have been turned over to local county management who have other funds to do the maintenance and upgrading. Currently a proposal is being considered to upgrade road 083 in the upper watershed for a proposed timber sale and this will increase recreation use in this area.

Refer to the Big Game section above on a discussion of the current estimate of big game cover across the watershed and the Transportation chapter on current levels of access and management. It is believed that the cover/forage estimate presented here is better than that done in Process Paper D. A broad brush approach to calculating habitat cover/forage and habitat effectiveness was done for the Revised Targhee Forest Plan using the HIDE2 model and estimates of tree densities. The method has been found to underestimate hiding cover in other locations on the Palisades Ranger District so it was not used here (USDA 1997; Process paper D).

Elk Vulnerability (EV) - This area falls within Idaho Game Management Unit 66 and the Idaho Department of Fish and Game goal for this area is to have no more than 60 percent bull mortality (USDA 1997; Process paper D). Elk vulnerability (EV) is measured by

percent bull mortality during the hunt and is an indicator of population health. For Game Management Unit 66 the EV is calculated at 61 percent for the watershed area (Elk – Bear watershed 37) for the existing condition as calculated in the 1997 Revised Targhee Forest Plan, Process Paper D. The vulnerability exceeds the threshold goal by only one percent. The fact that the watershed is mostly roadless helps to keep this vulnerability down. Along with hunt unit 59, unit 66 has the second highest hunter-day densities on the Targhee Forest (20 hunter days per sq. mile). Only hunt unit 60 is higher.

Motorized access also brings other uses and influences on wildlife habitat. Wherever roads go, increasing impacts of all kinds can be expected on wildlife and habitat. Roads and trails are used by livestock and ranchers managing livestock. The RTFP allows use of cross country travel routes by ranchers. Woodcutting occurs more often. Trappers have better access to trap beaver and other furbearers. During the critical spring season for big game “antler hunting” off of ATVs is a popular activity in the winter range. For every new trail or road that is created there will be new ones soon, or recreational hill climbs. Because the Bear Creek watershed is so steep and has so few roads, this kind of activity has been limited. Refer to figures. ATV activity in the reservoir basin is very popular and immediately interfaces with Bald Eagle territories. All of these activities are affecting habitat or wildlife in some way in the watersheds. Even the legal designated routes such as the main Bear Creek road (058) is affecting a certain amount of wildlife or the value of big game winter range in that corridor. To have a designated motor route through winter range is a compromise for both recreationists and the game. At this time it is not known if the previous use of winter range by big game on the south facing slopes of the main Bear Creek up to the North Fork of Bear has been negatively affected by increasing use of snowmobiles from the 1960s to present. Interviews with the historians group indicated that about 500 head of deer use to winter here in the 1960s (Haderlie 2002).

GRAZING, MINING, LOGGING, WOODCUTTING AND SPECIAL USE INFLUENCES

There are currently influences from grazing which probably ranks as the most influential effect in the watershed historically. Figure 30 shows old terracing done in the period of 1939 - 1960s (pers. comm. Ron Dickemore) throughout the Intermountain Region of the Forest Service to check the negative influence of overstocking of domestic sheep in the first part of the century. See past conditions sections. Domestic grazing currently is a rather small part of what it use to be.

No mining is known in the watershed today, but phosphate prospecting occurred in adjacent watersheds to the north. On Big Elk Mountain today is evidence of past drilling activity. The construction of FS road 863 was for the purpose of drilling these wells in 1966. Refer to past conditions section.

Logging and woodcutting in the watershed has also been limited. Refer to that section. Currently (2003), the Brockman Timber Sale is being proposed in the upper South Fork of Bear Creek watershed along with proposed temporary roads and development of a gravel

pit source to provide material to upgrade the roads there for the logging and future recreation. In the urban interface portion of the watershed being considered here around the Calamity Summer Home area, there has been a timber sale accomplished in the early 1990s in the Calamity Campground. See figures.



Figure 30 (left). Livestock grazing in the upper watershed in Elk Creek led the Forest Service in the period prior to and including the 1960s to do extensive dozer contouring to check erosion. Contours remain visible today.

Figure 31 (right). Domestic sheep grazing in the Bear Creek watershed in 2001, but at a much reduced rate from the historical past. See range section for more detailed information.

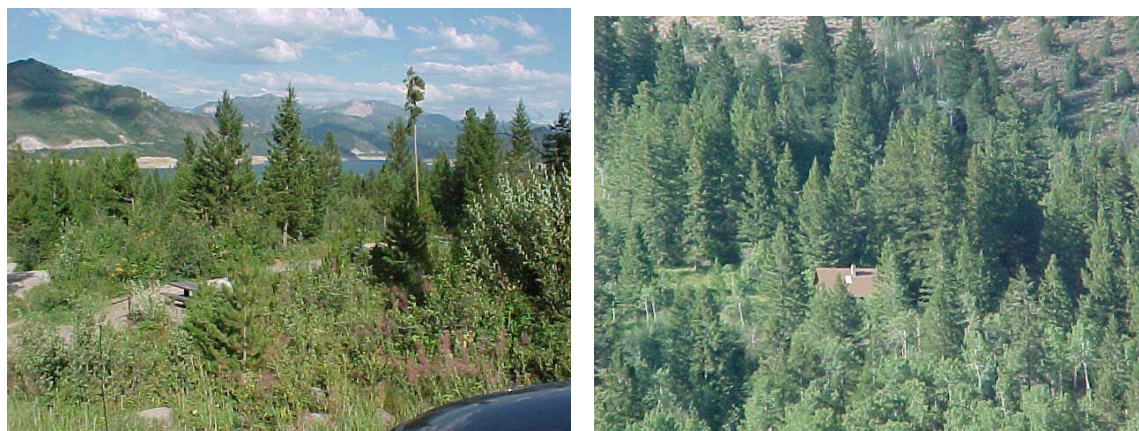


Figure 32 (left). Calamity Campground on shores of Palisades Reservoir which was logged in the early 1990s to reduce dying lodgepole pine trees which were a hazard to campers. It is returning to a more mixed conifer early seral forest type in and around camping units.

Figure 33 (right). The summer home special use cabins at the Calamity and Palisades Summer Home sites are in a hazardous fire urban interface situation with increasingly aging conifer, wildlife snags and down woody material. This area is in potential Bald Eagle nesting habitat along the shore of the reservoir and is important for other FS TES Species.

The summer home urban interface area in Calamity and Palisades Summer Home sites are currently being managed to reduce conifer and aging trees and other fire prone material. This is being done under the special use permits which have been issued to individuals to build cabins on National Forest lands here. These permits began to be issued in the mid 1950s (Pers. comm., J. Kopp 2003). Homes here are in potential Bald Eagle habitat and territories may have occurred here when Palisades Reservoir was flooded in the late 1950s, but no record is known of it happening. Nesting Osprey are often found in this north facing slope mixed conifer area. Currently, this land is managed for prescriptions 8.1 (campground), 4.2 (summer homes) and 5.1.3b (urban interface timber management) as described in the RTFP (USDA 1997). Refer to the Human Uses map in the Appendix section. Currently, no timber sales are planned for reducing the fire hazard, but local management of fuels near homes is occurring. There are also some power lines in the urban interface area. These may have both a positive and negative effect on raptors. Subsection standards and guides for the Caribou subsection call for emphasizing management of late seral and old growth Douglas fir, cottonwood and spruce trees within 1 mile of Palisades Reservoir for Eagles, raptors and other wildlife.

BEAR CREEK WATERSHED ANALYSIS

WILDLIFE

PAST CONDITIONS

Wildlife in the Early Days

The history of wildlife interacting with the first Caucasian people in and around the Bear Creek watershed goes back to some of the earliest history in the Western U.S. In September 1812 the party of Robert Stuart traveled and camped along the South Fork or the Snake River where Palisades Reservoir and dam is now. They would have traveled through or near the mouth of Bear Creek. During those days the South Fork was referred to as the Lewis Fork after Lewis and Clark fame. Refer to figures below and the first photo in the Introduction section for a picture of this area. This is the first trip of white men to be described in written detail in this area, and they were the first white men known to trap beaver on the streams of the Caribou National Forest (Webster 1972-74). That was the main purpose of why they were here at that time. Trappers were the entrepreneurs of the day.



Figure 34 (left). The Valley of the South Fork of Snake River prior to inundation in 1957 - 58. Some of the earliest US western history occurred here when the trapping party of Robert Stuart traveled and camped here in 1812. The main reason early explorers came to the watershed was to exploit the wildlife resource.

Figures 35 (right). Grand Valley and lower Bear Creek watershed is shown where the area was covered by cottonwood wetland/floodplain habitat and coniferous forest which was used by a great variety of wildlife species. View is looking up the mouth of Bear Creek prior to flooding by the Dam.

Trapping of beaver and other furbearers and hunting of bison and big horn sheep was the focus of the early trappers. There are records of beaver and bison in the general area (Russell; Editor Haines, 1965). It is likely that beaver trapping in Bear Creek was fairly good in the early days (1812-1820's). The first extensive trapping record (NW Fur Co.) was by McKenzie from 1818 – 1821. This party trapped the upper Snake River drainage, and rich fur from the Caribou was

highly prized. By 1845 many fur companies and trappers had covered the area fishing, hunting, trading furs with the Indians (who by now had probably begun trapping more to trade) and competing for the wildlife resources. By this time beaver, mink, bison and other furbearers were being depleted.

In 1835 Bonneville remarked that the country was no longer fit for white men because the beaver and buffalo were gone (Webster 1972-74). It is likely that during this time the stream channel of Bear Creek was beginning to suffer from degradation, bank cutting and down-cutting due to the reduction of beaver. The de-watering of the west is well known in many areas where trappers over-harvested the beaver. The beaver population was no longer there in enough numbers to keep dams repaired. Water which spread out over a floodplain with multiple smaller channels with beaver-made check dams often became channelized into one channel during spring high flows. The channels then down cut and locked into place and were often too large a flow for a beaver to control except in drought years.

The trappers kept coming. Osborne Russell (in this area from 1834 –1845) was originally one of Wyeth's employees and later was an independent trapper and he spent time traveling the Caribou subsection looking for beaver and bulls (bison). His poem "The Hunter's Farewell" (1845) appears to inform us of the wildlife he encountered such as: "timid lambs, harmless ewes (big horn sheep), feathered monarchs soard (eagles), antlered herds are dwindling fast (elk and deer), trails so deep by bison worn now teem with weeds or overgrown grass, guant wolves... where herds... have fed" and one of the final verses "once famed hunting grounds" tell some of the story (Webster 1972-74). It is quite likely he saw his Bald Eagles along the Lewis Fork (South Fork of Snake River) near Bear Creek and traveled up Bear Creek looking for beaver to trap.

It is probable that bison roamed into the side canyons of the South Fork of the Snake River a lot back then. Haderlie (2001) reported finding a bison skull in the 1980s two miles up Deadman Creek in Bear Creek after the highwater. This is steep terrain. It had washed out and he took the skull to Idaho State University for carbon dating. He indicated that it dated back to the early 1800s. It is likely bison historically roamed across mountainous ranges similar to the Bear Creek area. In fact, in 2002 a bison from the Jackson Hole herd roamed across the Snake River range in the Palisades subsection and was found near the mouth of Indian Creek on Palisades Reservoir (Hanson 2002) just upstream of the mouth of Bear Creek. Because of the fear of it spreading brucellois to domestic livestock in Idaho it was destroyed. From 1818 – 1845 the bison were slaughtered by the early day hunters (Webster 1972-74). Big horn sheep were plentiful up until 1840. Russell reported hunting lots of wintering big horn along the South Fork of Snake below Swan Valley in February 1839.



Figures 36 and 37. Beaver dam and beaver influenced floodplain on the South Fork of Bear Creek where old trappers probably trapped. As tremendous grazing pressure from domestic animals began in the 1890s and early 1900s impacts to the beaver influenced riparian system. For many western streams beaver populations had been reduced and then came the impact of unchecked grazing.

One story in the spring of 1861 is of traders who collected 460 beaver, 210 mink and 300 buckskins from trappers and Indians from Ft. Hall, up the South Fork of the Snake, Salt River, Tin Cup, Blackfoot River to Soda Springs. It appears this was all the catch for that winter which probably seems low for the time. Bison had disappeared from the country by 1860.

Goodhart (1842-1927; Trails of Idaho) reported killing deer in the South Fork of Snake River and seeing a thousand elk calves from Camas Prairie to Arco. This gives the impression that elk may have outnumbered the deer in the later 1800's. It appears that deer, elk, antelope, bison, big horn sheep became low in the 1870's and bison, sheep and antelope were eliminated by the early 1900's (Webster 1972-74). Russell didn't mention a lot of deer in the area like he did for the country north of Yellowstone National Park.

Wolves, coyotes, lynx, bobcats, bears (brown and black), wolverine and mountain lion were reported present in considerable numbers on the Caribou Forest until after 1900. The last grizzly was seen on the Forest in the 1920's, wolverine were unreported after 1925 and wolves gone since about 1930's. In the watershed north of Bear Creek, the Fall Creek Basin Cattle Association withdrew their \$50 bounty on wolves in 1938 and an old report showed they paid \$400 in 1921 for 8 wolf pup scalps (Webster 1972-74). It is likely that these hunters would kill or trap other species like the wolverine or lynx as well.

Lee Twitchell the Idaho agent for the Fish and Wildlife Service in 1945 said he trapped the last wolves in Caribou and Fall Creek Basins in 1929. Coyotes, mink, a very few marten, some red and cross fox, some bobcats and a few mountain lion are on the Caribou, and there are more than a few Canadian lynx on the north end of the Caribou Forest. Bear are present and otter are reported along the river and its tributaries, but the once crafty fisher is supposed to be entirely absent in about 1945. The impression is that the above reports are from the Forest wildlife report in about 1945 (Webster 1972-74).

At the turn of the century mule deer were reported to be present, particularly in the area to the north of the Bear Creek watershed in Fall Creek. Dan Bates was a trapper hired by the cattlemen to trap wolves in 1898 (Webster 1972-74).

About 11 days before the Stuart party camped in the Bear Creek watershed they camped in the Bear River country to the south and reported that the valleys had recently been burned by grass fire and they had seen lots of bison sign, but saw no animals. This was September 9, 1812. In late September 1834 at Ft. Hall, Russell wrote that “the country was very smoky and the weather sultry and hot”. Pioneer settlers reported seeing forest fires in the 1870’s up until 1888 and that they burned uncontrolled all summer long in the Caribou Forest. It is likely that fire was also a common occurrence in the Bear Creek watershed and the junipers had not increased in the sagebrush/bitterbrush habitats like they are today. Refer to photos in Current Condition section.

Today it is known throughout the intermountain west that quaking aspen clones have been taken over by conifers. It is most likely that aspen covered much more acreage of the forest type where it occurred ecologically back in the 1800’s. Based on the information available, summer fires would have kept encroaching conifer cleaned out of the stands. Resprouting aspen clones would have been more abundant and more sanitized from diseases and insects which often plaque old clones today.

Many thousands of cattle and horses started coming into the Caribou National Forest area as early as 1836 on the Oregon Trail and by 1875 there were large numbers of cattle herded by large range cattle outfits on the Caribou. The first sheep came in about 1883 (Webster 1972-74).

Eph Ricks a rancher from Rexburg who came in 1883 said there were no sheep then, but by 1896 range deterioration was noticeable in the Big Hole Mountains to the north. He said the bluebells and better forage plants were being replaced by grasses and inferior weeds. He said that at the time the Forest Service took over there was very noticeable overgrazing on all lands, not just Forest lands. By 1896-1898, at the peak of stocking, considerable erosion was evident. When he first came he had little difficulty in getting a deer or elk, but in the early 1900s the hunters made heavy inroads on the game, and he added that the game migration had been shortened by civilization preventing them from coming into the valleys as they did in the early years (Webster 1972-74). Refer to the Range section for more details.

Other ranchers around the Caribou - Targhee National Forest, which were interviewed in 1945 with Ricks told similar stories about the range and game. H.H. Thompson came in 1898 and he said there was no June grass then (probably Cheatgrass), but by 1945 the principle forage was June grass. He also said that there were less elk and more deer now (1945) than earlier (Webster 1972-74).

By 1900 livestock had damaged the grasses and forbs on the range, then came the fire control with the establishment of the Forest Service. The sagebrush and other woody plants were favored, thus mule deer increased and elk, which prefer grass, decreased. By 1945 active projects had begun on the Caribou Forest to remove the sagebrush. The goal was to treat at least 3000 acres a year until all areas which will be benefited by sage removal had been done

(Webster 1972-74). Refer to the Range section for more details. The active burning and railing of sage has benefited elk particularly (Webster 1972-74).

Wildlife in the Recent History

In July 2002 a group of historians were interviewed concerning the history of Bear Creek watershed in the past 40 years. Vaughn Haderlie is a retired big game outfitter who worked in Bear Creek his whole life and he also worked on the Palisades Dam construction in the 1950s. Jerry Reese is the current Forest Supervisor of the Caribou-Targhee National Forest and he grew up as a youth in the area. Jerry's father was the District Ranger over the Caribou area at the time. Alex Martin is a retired Forest Service employee who worked in the watershed, and Jerry Hansen is also retired and worked as a recreation staff person. These individuals had many of the comments shown below.

Winter range for mule deer within the watershed was found on the south facing slopes of Bear Creek on the north side of Palisades Reservoir, upstream to the North Fork of Bear Creek, according to Haderlie, Hansen and Reese (pers. comm. 2002) during the 1960's. Haderlie estimated that there may have been upwards to 500 head of mule deer wintering here. J. Hansen (2002) remembers seeing Golden Eagles feeding on carcasses as he rode the range in the winter with Idaho Fish and Game officer Dick Brody, and Bald Eagles were there as well. Currently, not all of this area is mapped as winter range in the Revised Targhee Forest Plan (USDA 1997). Refer to winter range maps shown as prescription 2.7a in maps 1 and 2 in the Appendix. Jerry also remembers a Bald Eagle which nested in the upper Bear Creek watershed (above the confluence with the North Fork).

During a similar meeting with some of the same individuals in 2001 Haderlie recalled abundant Blue and Ruffed Grouse populations in '60s and '70s. Flights by the Idaho Fish and Game had wintering elk on the ridges such as those south of Fall Creek. They recall that snowmobiles were just coming on in the '60s. Haderlie and Reese remembered the die offs of deer in the 1960's. Reese recalled the severe winters of '60 – '63. Haderlie remembers the slaughter of deer in Fall creek area to the north during the late season hunts of 1973-74. Haderlie remembers great deer hunting when he got his outfitters license in 1969. He recalls snowmobiles coming out with a deer strapped to each one in the '73-74 late hunts. He said one year 7600 deer were harvested and the next year's harvest was only 92 animals. Haderlie is most disturbed by the increase of ATV and motorcycle use since the 1960s and the damage it's done.

Martin doesn't remember all the noxious weeds competing with game forage and native plants like is seen today. They believe the occurrence began with motorized vehicles started spreading them all over the watersheds. Mule deer populations were at a historical high in the Caribou area when surveyed in February 1991. The winter of 1992-93 was severe and significant mortality occurred, especially to fawns. The population rebounded rapidly to long term average levels, but has not approached the extreme highs of the late 1980s and early 1990s (IDFG 2001).

Most in the group remembered that the Bear Creek area use to be a premier hunting area for mule deer. Several remembered the deer winter range extended up Bear Creek as discussed above. In discussing the decline, many thought that there are more elk now and also more

hunting pressure. They also indicated more moose. In discussing moose with J. Naderman (2003) of Idaho Dept. of Fish and Game, he indicated that they have no recent moose population estimates for unit 66. He said there has never been a survey specifically for moose in this unit. Naderman's general impression is that moose have increased in all the Palisades Ranger District units and the limiting factor appears to be the infrequent hard winter. Hunting of moose up until now has been very conservative and directed toward bulls, but this may change with some antlerless permits in the future.



Figure 38. As the reservoir filled for the first time in the late 1950s, logging debris collected above the historic mouth of Bear Creek at Van Point. Jams were created by logs from the massive clearcutting of cover in the reservoir basin including the Bear Creek watershed. This activity removed both cover and forage acres from the base available to big game, eagles and other wildlife. Evidence of the extensive clearing is shown by the cut line at the planned peak reservoir level. Brush burning resulted in fire escapes on Van Point (BOR photo; USDA 1985). The Palisades mitigation loss assessment and plan prepared in the 1980s and implemented in the 1990s identified the loss of big game habitat here. For a large part, big game habitat loss in the Bear Creek area and reservoir basin in general was mitigated for by the purchase of winter range north of Soda Springs, Idaho in the 1990s by the Bonneville Power Administration. Mitigation of cottonwood Bald Eagle habitat occurred partly by the purchase of the Deer Park Wildlife Management Area near Menan Butte.

In regards to fire and fuels, the group consensus was that there's a lot of woody fuel on the ground in the forested habitats of watershed, and that the spruce beetle and fir beetles have gotten worse. They seemed to agree that a study should be done before burning or letting natural

fire occur. J. Hansen suggested the FS have an outside party give us a different perspective. They indicated that the south side of Bear Creek (conifer dominated side) has a lot of fuel. They indicated that in 1889 – 1890 both sides of the reservoir area had burned. Afterwards, a lot of quaking aspen returned. This would have been good for both deer or elk in the early 1900s.

Recently J. Hansen (2002) rode into a head of elk that must have numbered 100 or more. Some mentioned that when the reservoir was flooded the cattle grazing was stopped and this may be a reason why elk came in stronger and deer herds left, and that the reservoir was a barrier to the deer. They indicated a wildfire occurred on the forest and more elk seemed to show up. Whitfield (USDA 1985) indicated that during the clearing of trees for the reservoir in the 1950s there were escaped fires on Van Point. Also during the 1960s there was a huge sheep reduction by the Forest Service because of overuse. Grazing of sheep was cut 66% in three years.

Big Elk Mountain had started to erode badly due to heavy sheep grazing with bands of 2000 or more each. Wildfire also contributed to the problem. In about 1958 – 1959 the mountain was terraced. As they terraced they also built a road. J. Hansen (2002) indicated that a fellow named Robinson from Thayne, Wyoming worked on the terraces as well as one of his own relatives who is now deceased. The soils did not recover well and the area was seeded.

The area of Chaparral Hollow farther up Bear Creek was bare. It was fenced and Douglas fir were rolled into the gullies. Dick Ward and Jerry Hansen helped to build this fence and part of it was done under contract (Hansen 2002). In the late 70's or early 80's big slides took out the sheep troughs.

According to the historians group, before the dam there was hardly any elk in the area. The elk began to migrate over from Jackson Hole, Wyoming. In the early 1950s a huge snow storm prevented the elk from returning to Jackson. They calved on the Idaho side and kept coming back year after year. They felt like the dam had a great effect on the deer population, because we had lost lots of winter range when the dam was built. They indicated that cattle stayed along the creek (Bear Creek), and sheep usually stayed where you put them. They said the elk would avoid where the sheep have just been, but if the sheep have been out of the area for a while then the elk would return to an area.

OTHER PAST USES AND OTHER WILDLIFE

Bald Eagles have had a long history in the area as mentioned by Russell and are in the watershed now. According to the historian group the old beaver trappers used Bear Creek as a travel route. Refer to figure 25 and table 6 in the current condition section for recent history of the Van Point eagle territory's nesting success and maps. As mentioned, Hansen (2002) indicated an active eagle nest far up Bear Creek during his years here. Hansen retired in the early 1990s. Also, according to him, prior to the reservoir being built the Bald Eagles nested along the river where Bear Creek entered river. He said that later, eagles nested upstream 1-2 miles above the confluence of Chaparral Hollow. He recalls them nesting on a big snag on the forested side (south side) of Bear Creek. He said he couldn't remember exactly where it was, but in that general area. Alford (2002) also recalls other reports of Bald Eagles being seen far up Bear Creek during the nesting season when he first came in 1985.

Cottonwood forest was and still is important to Bald Eagles for nesting, but since the reservoir flooding they have moved to less preferred conifer nesting trees (see figure 25). Cottonwoods are still in the bottom of Bear Creek, but are rare. The historian group indicated that there was a stand of cottonwood in Deadman Canyon, but these trees were taken out by the high water in 1988. Before the dam there was a lot of flooding in the area, which produced new brush and cottonwood tree stands. Cottonwoods went all the way to the Snake River Canyon according to our group. One-third of the valley river channel was constantly changing, and wherever streams were, there were cottonwoods.

The group discussed that they recalled very few wolf, mountain lion or coyotes in the watershed (1950s – 1960s) and thought there has been a big increase in black bear now. It is generally thought that the lion population in east Idaho is high now as well. ADC (Wildlife Services, Animal Damage Control agency, USDA) has an active program to control coyotes in the watershed and has done so for many decades now. This is true for bear and lion as well. It is likely wolverine have been frequenting the watershed the past 2-3 decades as well. No recent lynx sightings or reports are known of this very quiet and rare cat. Indications from Webster (1972-74) are they were found in the area during the early part of the 1900s, and that there were more than a few lynx in the north end of the Caribou National Forest. Not far away from the Bear Creek watershed, trappers were known to regularly take lynx in the late 1940s to the 60s. The location where the lynx in figure 39 were taken is less than 30 miles south of the Bear Creek watershed.



Figure 39. Recent historical Lynx in East Idaho. Five lynx above were trapped by Oliver Peterson (Montpelier, Id.) during a one week period in 1947 or 1948, 10 miles northeast of Soda Springs, Idaho. Oliver began trapping in 1945 and did most of his trapping in the 1950s and 1960s. He trapped 4 lynx in those decades and one came from the same area

where he caught the 5 shown above. He caught 3 lynx farther east near Georgetown. Except for one caught near timberline, the remaining were all caught in mosaic aspen, conifer and mountain brush. The last set of tracks he saw was a group of 4 - 5 in the late 1960s or early 1970s that spent the entire winter hunting on and around a series of beaver ponds near Soda Springs, Idaho. He didn't see any bobcats and only rarely saw coyotes in areas with lynx in the wintertime. He did his trapping on snowshoes and skis, and thought the demise of lynx in his area was due to lack of snowshoe hare and the increased access by snowmobiles and ATVs (Lewis and Wenger 1998).

Others have reported lynx or tracks throughout eastern Idaho from the 1940s until present time. The latest reliable report was in January 1999 in the Big Hole Mountains by Kelley Coburn and Mike Whitfield near the Big Holes sheep driveway. They reported seeing the animal and tracks (Whitfield and Coburn 1999). Harvest pictures, like Oliver's shown in Figure 39, are known in both Idaho and Wyoming up until about the 1970s. Photos similar to Oliver's were taken in the Big Piney, Wyoming area as well, close to where lynx were studied from about 1996 until 2002, when the last radio marked lynx died (Patla, Fralick 2002). Wayne Green (Alta, Wy. north of Bear Creek area) did all of his trapping in Teton Co., Wy. beginning in 1947 and often caught 4-5 lynx a year, but hasn't seen lynx sign since the 1980s. He attributed the decline of lynx to lack of snowshoe hare and increased coyotes and mountain lions (Lewis and Wenger 1998).

Other than the impact of trapping, hunting and grazing, other uses on wildlife have been rather minor except the advent of the motorized vehicle. It is a pretty good guess, from discussing this issue with those that knew the watershed best in the past, that the current heavy use of off road vehicles was not present prior to the 1960's. It is likely that the few 2 track roads that developed were after about 1945 when jeeps became popular after World War II. The historian group has seen the increase in use. Horse use was first just the elk hunters and the big influx came in the mid 1980s. The Caribou Forest to the south has been closed to motorized use for about 25 years or more. The increase of new illegal cross country routes has been increasing in force the past 6-7 years. Effects on big game, threatened, endangered and sensitive wildlife were probably minor prior to 1965. They also indicated they believe the spread of noxious weeds along backcountry trails is more along the motorized ones. Before, they saw knapweed and thistle more along the roads. Snowmobiles first started to be a problem here and other game winter ranges in the west in the late 1960s. Mining and logging were not a major use here in the past from all indicators and have not played much of a role in shaping wildlife habitat.



Figure 40 (left). Livestock grazing in the upper watershed in Elk Creek near Big Elk Mountain led the Forest Service in 1958-59 to do extensive dozer contouring to check erosion.

Figure 41 (right). Domestic sheep still graze in the Bear Creek watershed, but at much reduced rates from the historical past. See range section for more detailed information. Photo shows some of the raw habitat area in Chaparral Hollow as discussed by J. Hansen (2002).

In discussing the contour terracing done with bulldozers at head of Big Elk Mountain, R. Dickemore (2003) indicated that this activity started in the Intermountain Region of the Forest Service in about 1939 until the 1960's and was done all over the region. Grazing probably ranks as the most influential historical activity that has affected wildlife habitat in the watershed and overgrazing and the soil erosion was the reason for the contour terracing. This was to help check the negative influence of overstocking of domestic sheep in the early part of the 1900s. Another influence in the watershed at Big Elk Mountain is the existing FS road 863 which winds 4 miles up the mountain. It is probably the highest elevation road on the Ranger District. The drilling activity here in about 1966 was the main reason for the road being built, but it was never closed. It is now part of the Forest road system. Our historian group indicated that the Big Elk Mountain drilling exploration occurred again after the Yellowstone earthquake in the early 1970s and that two wells were drilled at the end of the road, and that they hit gas. No mining activity is known here since then.

BEAR CREEK WATERSHED ANALYSIS

WILDLIFE

TRENDS

1. Where quaking aspen clones occur they are usually in decline and conifer is encroaching and taking over successional. Fire hazard in the timber types is increasing as the conifer stands are aging and dying. This is creating standing and down dead wood. Wildlife species, like cavity nesting owls and other species still present (e.g. Fisher like old forests, but may not be present), should be getting to a population high compared to the 1800s when fire was a more natural part of the ecosystem. There will be some aspen being impacted by browsers in winter range, both domestic and wild.



Figure 42 (left). Aspen clones throughout the watershed area being lost to conifer succession. This is just a reflection of the same trend throughout the intermountain west where upwards to 80 percent of aspen or more is lost in some locations. This is an aspen clone in the predominately coniferous north facing slopes of Calamity.

Figure 43 (right). Most of the forested portions of the watershed are in late seral, mature conditions with increasing amounts of dead standing and down woody material. This is making for excellent habitat conditions for wildlife species depending on snags and old forests. Pictured snags are in the Calamity area.

2. The beaver decline caused in the early 1800s by over-trapping throughout this part of the west probably caused some dewatering of the watershed (e.g. dry stream beds in late summer in dry years) causing damage during high water events and spring runoff in heavy snow years. This lack of beaver in those days along with the heavy livestock rates in the late 1800s and early 1900s probably caused some damage in Bear Creek. Thus, it was a beginning to increased erosion rates and loss of wildlife willow habitat. The drainage still has stability problems associated with beaver dams, disturbance by grazing, trails and

recreation. The beaver's habitat was then impacted by not having higher water tables to grow enough willow to keep a sustainable population in all areas. Bear Creek probably has less of a problem with this trend than other drainages because of its roadless character.

3. Motor access density on National Forest lands has increased dramatically on both legal and illegal routes, impacting both summer and winter wildlife. This has probably been less of a problem for Bear Creek than many other areas. Prior to the 1960s and 70s snowmobiles had not come on the scene to impact wildlife. Prior to the mid 80s 4x4 ATVs had not been on the scene. This trend is increasing direct damage to both upland and riparian habitats. The increased motorized use is impacting the way game use the habitat and they are being displaced during heavy use periods, like during the hunting season. The trend is that the motorized vehicle damage to animals and habitat will continue to increase as the population of vehicle riders increases. The FS has increased its law enforcement effort in the problem areas of the Bear Creek drainage and positive results appear to be the trend, especially during the hunting season. It is hoped the negative trends seen elsewhere will not be a problem for Bear Creek. It is not clear why there is less wintering deer in Bear Creek as reported for 40 years ago; this could be related to newer and better snowmobiles, but may not be.



Figure 44 (left). Motorized recreation is popular in the Bear Creek watershed with motorbikers, but there are not many trails wide enough for the wider ATVs. FS law enforcement has checked much of the illegal use of ATVs in the watershed recently. How long will this last? How much more increase in motorbike use will occur on the narrow trails of the roadless area such as Deadman Canyon, etc.? Is the increasing tide of more and more motorized users in the backcountry affecting distribution of big game during the summer and falls seasons?

Figure 45 (right). Boat club facility located in the Bear Creek arm of Palisades Reservoir which is under special use permit by the Forest Service. There are other summer homes, and facilities (all on NF land) in the Calamity portion of the watershed which is important Bald Eagle nesting habitat. At the same time there is an increase of both down and standing dead old age conifer in the area. There is emphasis to manage old age trees for eagles and other wildlife within a mile of Palisades Reservoir. At the same time there is an

increasing risk of wildfire to the facilities and homes which have been developed here. What will the trend and habitat quality be for wildlife in the future? Increasing human activity will also increase the risk of man caused fire. Refer to the human activities map in the appendix.

4. Elk migrating from the Tex Creek wintering area have been shown, with Idaho Department Fish and Game studies, to pass through both the Fall Creek and Bear Creek watersheds and spend the summer in hunt unit 66A to the south on the Soda Springs Ranger District. Correlation of radio tracked elk from 1998 to 2000 and from previous collar studies may indicate that the motorized use during this period may be forcing animals to move to a more remote location. Refer to figure 22. Is this a negative trend, avoiding the motorized backcountry trails, or is the elk herd movement a traditional pattern?

5. Dispersed camping has and is continuing to impact riparian habitat in Elk Creek and the South Fork of Bear Creek. Associated illegal ATV activity is also present.

6. Is there a winter range problem on the south facing slopes of Bear Creek up to the North Fork? In times past this was deer winter range. Now, it is not. Is there a negative trend or effect by the increasingly more modern and efficient snowmobiles? Newer more powerful machines allow some to climb steeper hills than in the past. Those going far off the trail into wintering herds like on Fourth of July Ridge, for example, could be causing harm to elk and deer. No study of this has been done in this area.

7. *Fire suppression has favored late seral species in forested habitats. Suppression has been the main cause of the crisis in this area and the aspen ecosystem and associated wildlife appear to be the main causality.*

8. Species basically missing from this watershed that were here prior to 1900 include: grizzly bear, gray wolf, bison, rocky mountain bighorn sheep, fisher, wolverine and Canada lynx. There may be some that travel through the area from time to time such as a single wolf, grizzly bear, wolverine or even lynx. It is unlikely that many will return anytime in the near future in viable numbers for various reasons. It is very likely that gray wolf packs will return to the area and there is an increasing chance that wolverine will be viable. There is also a good chance grizzly may return to what is considered one of the top 3 most suitable habitat areas for grizzly in the state of Idaho (Merrill et al 1999). Big game herds would provide a ready food supply for them year round. A fisher could be here today, but it would probably take a transplant to get a viable population anytime soon. Bighorn sheep probably won't return until domestic sheep are phased out and there are no plans for that. An occasional bighorn will show up in the Palisades area across the reservoir from the Teton herd. If allowed, bison could also returned, but they would just be passing through. If and when the wolves show up, wolverine may be seen more often, also foraging on wolf killed carcasses. Lynx are so rare that only an occasional animal would be expected. It could be that much of the problem for lynx is the same as stated by

the lynx trapper from Soda Springs. They will not be viable with all the new and increasing snowmobile activity throughout the high elevation habitats.

9. The trend for Bald Eagles nesting on Van Point and foraging in Bear Creek is not expected to change very much. It should continue as a viable nest territory depending on the impact recreationists have along the north shoreline. In 2002 a new permit was issued to para-gliders to operate on the north shore, but they are limited to operate after the nesting season in mid August. Potential nesting habitat in the Calamity front is expected to become less viable if future projects are completed which remove potential nest trees with logging operations or fuel reduction projects.

BEAR CREEK WATERSHED ANALYSIS**WILDLIFE****RECOMMENDATIONS****Restoration and Protection for Improving Conditions**

- 1. Management Projects need to continue on some scale to better manage off highway vehicle use in the watershed year-round, particularly in fall hunting season and snowmobile season in big game winter range.**
- 2. Have an annual meeting just to discuss coordination needs and measures between Forest Service managers in the watershed and Idaho Department of Fish and Game for management of the adjacent Tex Creek Wildlife management area. A memorandum of understanding between agencies may be needed to help prioritize this effort. Big game which winter in Tex Creek travel through and summer in this watershed.**
- 3. Do riparian improvement work (e.g. erosion control) and willow planting projects in Bear Creek, including the upper portion, South Fork and lower parts above the reservoir on some small scale as needed. Work with beaver to help keep them viable in the watershed.**
- 4. Better manage motor vehicle use in riparian habitats, particularly dispersed recreation in Elk Creek and South Fork of Bear (e.g. use of large boulders to control vehicle access and signing). Some of this work has already been done.**
- 5. Consider cooperative work with special use permit holders at summer homes to help them make their homes and areas safer against fire while retaining the larger trees for shading and habitat for wildlife in the Calamity area. Recent research has found that removing the larger trees does not improve fire safety. It is the smaller ladder fuels and brush that is the problem. Larger trees retained actually maintain shading and less drying of fuels around home and surrounding forest. Emphasis should be on homeowners using fire resistant materials in their build. Many homes which have burned in recent wildland/urban interface fires have done so from blown in material with larger live trees left standing next to the house. We need to apply the most recent fire protection science here.**
- 6. Continue to apply the guidelines of the Palisades Reservoir Bald Eagle management plan to the Van Point eagle territory and evaluate the needs of foraging eagles along the north shore of Van Point with the placement of ski docks as originally stated in the eagle plan. The plan calls for docks not to be placed in certain locations until after certain dates in the summer during the nesting season.**

Inventory and Monitoring

- 1. Do beaver inventory, mapping and survey for present and past use.**
- 2. Do aspen condition inventory to determine the proper treatment of existing clones (e.g. fire, cutting, logging).**
- 3. Work with the Wildlife Management Institute in Jackson Hole through the Caribou – Targhee cost share agreement to assist in documenting wolverine use in the Bear Creek watershed.**

BEAR CREEK WATERSHED ANALYSIS

WILDLIFE

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